BILL RAWLING

The Myriad Challenges of Peace:

Canadian Forces Medical Practitioners Since the Second World War

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Author's Note

There are almost as many approaches to history as there are historians, and the discipline certainly has its fair share of idiosyncratic, eccentric, and even bizarre practitioners. Even within the mainstream, one can easily find mutually exclusive, often conflicting philosophies. One group could be said to be made up of advocacy historians, who condemn the wrongs of the past so as to correct them in the present, usually through government apologies and financial compensation packages; among military historians, several who focus on the Korean War fall within this group as they seek recognition for the veterans of that conflict. Others are revisionists who want to convince us that previous historians and chroniclers have got it wrong; the revisionists focus their attention on the heroes of the past in order to demonstrate that they were frauds—or merely human. A recent example of this approach is work on Billy Bishop, First World War Canadian air ace who, at least one analyst claims, did not score as many victories as were attributed to him and—worse—did not deserve the Victoria Cross he was awarded in 1917. Other historians are simply judgmental, pointing the finger of blame for past mistakes; generals and staff officers have often been their targets.

This historian has consciously attempted to be neither advocate, prosecutor, nor judge. To some, that might constitute intellectual cowardice, or worse, laziness, but in many ways an anthropological approach to history (attempting to study rather than judge) is more challenging than an attempt to criticize or applaud the actors that have played their varied roles on its stage. Understanding requires more effort than taking sides, for it forces the researcher to go beyond his or her world view and place people and events within their historical context. To take one example from the narrative that follows, for the Canadian armed services of the 1950s to fail to consider recruiting women as medical officers is something this author would condemn if that decision were taken today, but in considering the attitudes of the army, navy, and air force at that time, one has to take into account a social context where segregated gender roles were widely accepted. Similarly, we now live in an age where Canadian soldiers, sailors, and air personnel are expected to accept, at least superficially, cultures that are not Judeo-Christian; but as recently as the 1970s medical practitioners openly criticized local healers—and entire religions—if they were perceived to be obstacles to improving health or saving lives. If people spoke out in this manner today, this writer would accuse them of narrow-mindedness—or worse—but one must understand that western medical practitioners in previous decades were raised according to western values and educated in western medicine. Anthropologists they were not, nor could they be given a health care workload that allowed little or no time for pursuits other than medical.

If the above makes the author sound like an apologist for medical practitioners, that may well be the case. It is not unusual for historians who study a particular group of people to gain a certain sympathy for that group. One is, after all, reading documents and interviewing individuals who tell the story from their point of view. That this particular historian was trained in western methods of investigation, with its emphasis on evidence, only reinforces that bias. As the reader shall see in regards to Gulf War syndrome, for example, this writer has chosen to side with medical practitioners who insist they are dealing with a wide variety of illnesses with an equally wide variety of causes rather than with journalists and advocates who make emotionally compelling arguments that there is but one cause of so many people's suffering. Such an approach on the author's part may seem insensitive, but it may be legitimate nonetheless.

Similarly, in discussing issues related to psychiatry and psychology, this writer will present the medical practitioner's view and not that of its opponents (except in this note). On occasion, admittedly rare, this author has heard fellow historians ridicule individuals who thought they might be suffering from, or were diagnosed with, post traumatic stress disorder. Such researchers do not, however, seem to have reached such a position after investigation and reflection, but are rather relying on old stereotypes of what kinds of injury or illness are acceptable in a soldier. Again, this narrator will side with those who can present evidence of the type that convinces medical practitioners rather than with those who rely on gut feelings—as strong as the latter may be.

What follows, then, is a narrative of how health care was organized, practised, and supported within Canada's fighting services from the first days of peace following the Second World War to the military operations of the end of the century. It will focus not only on what medical practitioners did, but on how they were recruited, trained, deployed, and supplied. The result is a very complex story, and the author owes a great dept of gratitude to those who helped make sense of it: individuals such as Professor Donald Avery of the University of Western Ontario, whose recommendations for major revisions improved the text substantially; Major Michel Deilgat, who picked up many of the author's sillier mistakes; Chief Warrant Officer Mike McBride, who added a needed element of humanity to the narrative; and Colonel Ken Scott and Dr Mark Zamorski, who helped the author come to grips with some of the more difficult medical issues. Equally worthy of mention is Lisa Laframboise, who improved the manuscript's prose and made opaque sections clearer. Any errors or omissions are, of course, to be laid at the author's door, but if this tome is a useful one it is in no little way due to the efforts of others.

Bill Rawling
Ottawa, 2003

Prologue

Canada's largest military deployment in its history ended in 1945, over a million of its people having worn a uniform and some 42,000 being killed or dying of wounds or disease. And as had happened at the end of a previous world conflict, the cessation of fighting created an immediate demand—by those in uniform no less than their compatriots on the home front—for a return to a normal, peacetime way of life. Demobilization was the order of the day, and those who had supported the war effort through their knowledge of things medical were as anxious to get back to civilian ways as any of their comrades-in-arms. True, lessons had been learned from the carnage, many of them extensions of knowledge gathered in the First World War, such as the benefits of quick and adequate replacement of blood and fluid loss after wounding, and of the necessity to debride, that is to say cut away dead tissue, so those same wounds would heal properly. There had also been more recent developments, such as the use of antibiotics, new anaesthetics, and inoculations, and recognition of the value of early ambulation in rehabilitating patients;[1] but not all of these lessons were easily applicable to civilian medicine, and it was to the latter—or to other non-military pursuits—that uniformed medical practitioners wanted to return.

In the course of the war, tens of thousands had served in the Royal Canadian Army Medical Corps (RCAMC) and in its sister organizations within the Royal Canadian Air Force and Royal Canadian Navy. The army's health system was the largest of the three, 34,786 having worn its uniform: 598 of these became battle casualties, and 107 died of their wounds. A fatality rate of three-tenths of one per cent meant less trauma than, say, in the infantry regiments or in Bomber Command, so the great majority of the RCAMC's members could look back on their service as in some way beneficial and worthwhile. Other branches of the fighting services had been far less fortunate, so that some of those medical practitioners who had served during the war would continue to work with the victims of the conflict, veterans' hospitals housing and treating

[1] G.W.L. Nicholson, *Seventy Years of Service: A History of the Royal Canadian Army Medical Corps* (Ottawa, 1977), 253.

22,000 ex-service personnel by early 1946. For those who wished to remain in uniform, however, opportunities would be strictly limited in the immediate post-war era, the RCAMC, for example, being reduced to a single field ambulance unit and a school, in Borden, with a staff of about a hundred.[2] Peace had returned.

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[2] G.W.L. Nicholson, 252, 253, 254.

Chapter One

War's End

Historians in the industrialized world have tended to see the subject of their craft as something that can conveniently be broken down into more easily studied parts, either thematic, such as social or political history, or temporal such as the so-called Middle Ages and the Industrial Revolution. Such distinctions are, of course, artificial (though wonderfully useful when it comes time to divide the discipline into different courses for a university programme), and to say that the Second World War ended in 1945 is simply a way to close a chapter—or open a new one. To participants who were left permanently injured in body or mind, the conflict never really came to an end, while for those whose profession was concerned with the use of arms (or with repairing the subsequent damage) war, actual or potential, was a permanent fact. The period following the German and Japanese surrenders of 1945, and preceding the invasion of South Korea by its southern neighbour, is an excellent example of this state of affairs, where even in the absence of battle, complexity can be the order of the day.

To take a rather bureaucratic view of the issue, war expenditures do not end when papers supposedly ending the war are signed, and a government's responsibilities continue into what many would call the post-war era, hence the formation of such institutions as the Department of Veterans' Affairs (or DVA for short). As the visiting British doctor Langdale Kelham reported after he and his colleagues toured North America:

> Canadians who have lost a limb in the last War have formed themselves into a very powerful Club widely known as 'The Amps', whose activities are partly political and partly social. A representative of the Club meets every amputee as he lands from a hospital ship, keeps an eye on him during treatment, visits his relatives and discusses with them the man's

A veteran of the Second World War with an artificial hand, employed as an interviewer by the Department of Veterans' Affairs, in Edmonton, Alberta, April 1946. National Archives of Canada, C 49415.

> future, and then when the amputee has been satisfactorily fitted with a limb, arranges employment for him.[1]

The good doctor further noted that there was no similar organization in the United Kingdom.

What he did not note was that physical injuries were far easier for elected representatives, bureaucrats, and voters to relate to than some of the other consequences of war, especially psychological trauma. Still, though there was no equivalent of the War Amps for victims of battle exhaustion, that is not to say that sufferers were wholly ignored. As a history of the National Research Council's Associate Committee on Army Medical Research related,

> In March of 1944 Col[onel] J.D. Griffin applied for a grant in aid to make a survey of civilian readjustment of soldiers discharged because of psychoneurosis. It was estimated that from the beginning of hostilities until that time, some 15,000 men had been discharged from the Canadian Army with psychiatric disabilities of the psychoneurotic type.

Over 500 ex-soldiers were interviewed, while social workers conducted detailed investigations;

> The appraisal of civilian readjustment was made by personal visits. In all cases an attempt was made to interview the man himself. Members of his immediate family were also interviewed and in many cases contact was made with his employer. An effort was made to gather all pertinent information concerning the status of his health, social and emotional

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[1] National Archives of Canada (NA), RG 24, v.12,574, 11/Amputations/1, Report on a Visit of Dr Langdale Kelham, et al, to Canada and America in February 1944.

> adjustment prior to Army service. Special study was also made of any family patterns of illness or emotional instability. The Social Worker interviewed the family in an effort to get a detailed life history of the ex-soldier. Particular attention was paid to the incidence of neurotic traits in childhood, difficulties in school, extracurricular activities of the man, his work history, the interpersonal relationships in the home as well as his social interests and contacts outside the home. Similar detailed information was obtained with respect to his post discharge adjustment.[2]

One conclusion was that "Most were cases of neurosis of civilian origin. They should probably never have been admitted to the Army. Slightly less than half the men examined after discharge were feeling worse than before enlistment." Clearly, the medical profession thought the problem lay with recruiters, who failed to weed out those who were not psychologically fit for the rigours of combat and army life. That each soldier had a supply of fortitude that could be depleted over time until he or she could take no more was a concept that had yet to take root.

Some patients, however, were indeed deemed to have suffered psychological injury as a result of military service, while those with physical disabilities, as we have seen, were more likely to be regarded as deserving of taxpayer support, so that in the first three months of 1946 the number of in-patients in veterans' hospitals doubled, to 22,000.[3] Even fifteen years later, following the decision to build a National Defence Medical Centre (NDMC) in Ottawa, providing treatment for veterans of the Second World War (and by then, Korea) continued to loom large. According to a now-anonymous staff officer writing in September 1961,

> In 1954 it was agreed that DVA be granted the space required to directly control the administration and care of their patients in the NDMC on the basis that DVA would be operating their own hospital functions within the space provided by the DND. DND was to provide only such specialized medical and administrative service as DVA could not provide themselves. As the number of DVA patients was expected to be equal to the number of DND patients, it was assumed that the patient control and out-patient treatment areas could be shared on an equal basis with equal staffs.[4]

Architects drew up plans accordingly, the casualties of current operations and training to share space with their predecessors from older conflicts.

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[2] NA, RG 24, v.312, file 6, History of the Associate Committee on Army Medical Research, 1942-1946, 67-68.

[3] G.W.L. Nicholson, *Seventy Years of Service: A History of the Royal Canadian Army Medical Corps* (Ottawa, 1977), 253.

[4] NA, 1998-00220-2, Box 1, 1901-0, National Defence Medical Centre, Relative Responsibilities and Ensuing Space Requirements, Department of National Defence-Department of Veterans' Affairs, 19 Sep 61.

As well as dealing with the consequences of the previous war it was crucial to prepare for the next, including the formation of headquarters organizations whose role was to plan for the worst. One such organization was the Defence Medical and Dental Services Advisory Board, authorized in 1949

> to advise the Minister of National Defence on all matters connected with planning for the defence of Canada in the event of an emergency and pertaining to the provision and assignment of medical, dental, nursing and hospital personnel, hospital facilities and supplies, and to perform such duties in connection therewith as the said Minister may from time to time direct.[5]

It would certainly not lack for rank; its membership included the Medical Director-General for the Royal Canadian Navy, the Director-General Medical Services (an army officer), the Director of Health Services for the Royal Canadian Air Force, the Director-General Dental Services, the Director-General Treatment Services for DVA, the Coordinator of Civil Defence, three representatives from the Canadian Medical Association, and one representative from each of the Canadian Hospital Council, the Canadian Dental Association, the Canadian Nurses Association, the Canadian Public Health Association, the Department of National Health and Welfare, the Department of Labour, the Defence Research Board, the Defence Medical Association of Canada, and the Defence Dental Association of Canada.

One of these, the Defence Medical Association, will appear often in this narrative and is thus worthy of proper introduction. It had deep roots as, according to its own history,

> The first recorded general meeting of doctors interested in military medical matters in Canada took place at the time of the meeting of the Canadian Medical Association in 1892 at Montreal. On this occasion the name adopted was "The Association of Medical Officers of the Militia of Canada." This Association met regularly for a number of years but since it devoted some energy to criticising the inadequacies of current military medical administration its health was not fostered by those receiving the criticism and it was allowed to languish.

A new association was formed in 1907, and through several name changes became the Defence Medical Association of Canada thirty years later. Its role was "to foster the development and efficiency of the Medical Services of the Canadian Forces," by "bringing to the attention of the proper authorities recommendations and suggestions which in the opinion of the Association will improve the efficiency of the Medical Services," by "maintaining liaison between the members of the Medical

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5. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, PC 4291, 24 Aug 49.

Services and the medical profession," and by "serving as a responsible body through which the Canadian Forces may disseminate knowledge on medical matters pertinent to the defence of Canada."[6] It still operates today.

As for the post-war Defence Medical and Dental Services Advisory Board, the depth and breadth of issues it and other such bodies would have to deal with were not far short of infinite. To give just one example, in September 1950 Brigadier L. Coke, the Director-General Medical Services, reported that he had recently received a questionnaire from the International Congress of Military Medicine and Pharmacy on the problem of medical personnel who might become prisoners of war in a future conflict: "Article 28 of the 1949 Geneva Convention states that medical officers who fall into the hands of the enemy may only be retained insofar as the needs of prisoners of war demand," he related, and "Those whose retention is not necessary shall be returned. The detaining power is in no way relieved of its obligation with regard to the medical welfare of prisoners of war."[7] Determining which practitioners were needed in the camps and which could be sent home was no easy matter, however, and the issue was only one of hundreds with which staff officers and the armed services' leadership had to wrestle.

One of the most likely issues to receive detailed attention was the possibility of nuclear war, an eventuality military medical practitioners began to contend with soon after the bombings of Hiroshima and Nagasaki. For information on the subject, the Department of National Defence turned to its neighbours to the south, reproducing a document entitled "Acute Total Body Radiation Illness, Its Role in Atomic Warfare and Its Influence on the Future Practice of Military Medicine." Like all such analytical exercises, it discussed its subject in terms that, though bereft of emotion, still evoked the nature of the holocaust its readers might face:

> The occasional accidental case of acute ionizing irradiation illness and the thousands of cases that would occur after an atomic bomb explosion present two entirely different problems. This is so because military casualties present a unique medical problem in which the primary objective is the return of men to duty so as to maintain the fighting strength at a maximum. This is accomplished by caring for the less seriously injured first and returning them to duty. Those that have a reasonable chance of salvage are attended next, and the fatally injured are given palliative treatment as soon as practical.[8]

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[6] NA, MG 28, I157, DMA, v 2, Minutes of Annual Meetings, 1966.

[7] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Brig L. Coke, DGMS, to Sec ISMC, 22 Sep 50.

[8] NA, RG 29, v 674, 108-1-12, Acute Total Body Radiation Illness, Its Role in Atomic Warfare and Its Influence on the Future Practice of Military Medicine, nd.

Such an approach was not without reason, given the military priority of defending the nation: "Even the treatment of sick and wounded soldiers is not the medical officer's most important function," the document suggested, though it admitted that "The medical officer should be the last to belittle that honored role, for the care of the wounded and sick fighting men is the one softening trait in the grim business of war." As for the specifics of dealing with radiation victims,

> The critical problem is the quick, accurate segregation of casualties into three categories on the basis of the amount of radiation received... Without segregation and reassurance to those that have a chance for survival, panic and utter chaos can be anticipated. With segregation and reassurance a large group can be salvaged to carry on essential work.[9]

Analysts throughout the industrialized world suggested that preparing for nuclear war, as well as the use of biological and chemical weapons in the next conflict required something akin to full mobilization in time of peace. A 1952 paper by Brigadier-General A. Sachs was typical in suggesting that

> The weapons used in modern scientific warfare aim at mass destruction, and have created medical problems of a magnitude never previously visualized... If the medical resources of the Country are to be effective there must be full co-ordination between the medical services of Civil Defence and of the Armed Forces... Civil Defence planning before the onset of hostilities must aim at minimizing the effects of modern warfare on the civil population.

After a nuclear exchange, for example, medical practitioners would not only have to face "large numbers of injured" but have to deal with "the prevention of further casualties from residual radiation and contaminated food and water supplies."[10]

Radiation victims would first demand attention, however, and experience in Japan suggested that they could be divided into three groups. First were "Those receiving a lethal dose of radiation. In such cases, severe vomiting and diarrhoea came on within 1 to 3 hours and fever and marked wasting developed within one week, by the end of which time the majority had died, though some survived for as long as two weeks." Second were victims with significant, but not lethal exposure: "The onset of symptoms was delayed until the end of the second week after exposure. These consisted of loss of appetite and malaise, diarrhoea and some wasting, and loss of the hair. Recovery largely depended on good nursing." Finally, patients with low radiation exposure would

[9] NA, RG 29, v.674, 108-1-12, Acute Total Body Radiation Illness, Its Role in Atomic Warfare and Its Influence on the Future Practice of Military Medicine, nd.

[10] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 20.

experience "Symptoms of the above type ... to a slight degree after the second week," or even no symptoms at all. To distinguish between the three groups, it was suggested that "An examination of the blood of casualties by counting the different types of blood cells gives a fair indication of the severity of the illness... The assessment of the degree of radiation injury and the giving of transfusions are among the major medical problems," since blood and blood products would no doubt be in short supply.[11]

The threat posed by other weapons of mass destruction did not loom as large; Sachs suggested that biological warfare was "one for which the most extravagant and unrealistic claims have been made," while "Defensive measures against biological warfare agents must be based on the fundamental principles of public health for preventing the spread of disease," such as establishing facilities for detecting and identifying biological agents. The first line of defence, in fact, would be the use of protective clothing and respirators, the second line consisting in immunization to prevent disease after infection. As for chemical warfare, Sachs noted, "Chemical agents do not only constitute a menace in war, in peacetime they may form serious industrial risks," such as poisoning by DDT. More modern nerve gases were a special category:

> It has been found that the early administration of atropine is the best line of treatment, but it is emphasized that this must be given early. Since atropine is the principal therapeutic agent, the correct dosage should be available in a readily usable form, such as a syringe for self-injection. Artificial respiration may be required to restore natural breathing after severe poisoning.[12]

Determining whether or not the armed forces would face such weapons required information, while determining what types of challenges health services would face called for specific medical intelligence. In the peacetime atmosphere of the immediate post-war period, however, resources to collect data were minimal at best and relied heavily on personal liaison on the part of medical practitioners. In May 1948, for example, Air Commodore R.C. Gordon, the Air Member of the Canadian Joint Staff in Washington, DC, provided a list of reports that had been forwarded to Britain's Air Ministry by the Air Staff (Medical) of the British Joint Services Mission. Furthermore, he had made arrangements to provide monthly lists to Air Force Headquarters in Ottawa: "If, on your review of the reports forwarded to Air Ministry, they appear to be of interest to the RCAF, please indicate and arrangements will be made for obtaining same."[13] Such activities were not limited to locations where high-ranking officers from Second World War allied countries hob-nobbed; Group Captain F.A. Sampson, the Air Attaché to Buenos Aires, reported in 1949 that the Argentine press had announced the publication of a book on *Medicina Aeronautica* by a Dr Humberto A.O. Soldano. Interestingly, "It has been ascertained that Dr Soldano is a young dental officer on the medical staff of the Argentine Air Force." He had been "an outstanding student" at Canada's Institute of Aviation Medicine in 1947, but his book seemed to offer nothing that the Royal Canadian Air Force did not know already.[14] It was a rather informal approach to medical intelligence, although as we shall see such operations would gain in organizational sophistication after the outbreak of war in Korea.

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[11] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 20.
[12] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 20.

* * *

Chain of Evacuation

Stretcher Bearers or Comrades at Section, Platoon, or Company Level
to
Regimental Aid Post (RAP) at Battalion Level
to
Field Ambulance (Fd Amb) Sections for transport
or Casualty Clearing Post (CCP) of the Fd Amb
to
Advanced Dressing Station (ADS) of the Field Ambulance
to
Field Dressing Station (FDS)
to
Casualty Clearing Station (CCS) or Field Hospital or permanent hospital

* * *

Until then, preparations for conflict would be somewhat incomplete, whether they were for a nuclear apocalypse or for a more familiar conventional type of warfare that could have a nuclear, chemical, or biological component. In the immediate post-war period the lessons of 1944-45 were uppermost in policy-makers' minds, so developing doctrine for such matters was much eased. Basically, the Royal Canadian Army Medical Corps envisaged three types of situation: the deliberate encounter (known more commonly as "the advance"), the pursuit, and the withdrawal, though a 1947 paper promised that "Employment of Medical Units with Airborne and Assault Formations and in the Arctic will be the subject of special communications." The first scenario to be studied, then, was the deliberate encounter, where

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[13] NA, RG 24, v.5386, 47-13-1, Air Commodore R.C. Gordon, Air Member Cdn Joint Staff Washington, to CAS, 6 May 48.

[14] NA, RG 24, v.5386, 47-13-1, G/C F.A. Sampson, Air Attache Buenos Aires, to CAS, 18 Jul 49.

> the Commanding Officer will place certain Unit Personnel detailed to act as Regimental Stretcher Bearers and such vehicles as he may allot for the evacuation of casualties under the command of the Regimental Medical Officer. The RMO establishes a Regimental Aid Post in a suitable site close to the battalion Command Post from where he can best operate and where communications are available. He allots his resources to the Troops in action and establishes contact with the Field Ambulance clearing his RAP. As the battle progresses his responsibility includes the immediate treatment of casualties and he moves his RAP forward or back as the situation develops. The RMO performs his function from a single location, and does not attempt himself to cover the whole Unit Area. The Medical Assistants and Stretcher Bearers will perform this function. He will at all times be prepared to form an RAP with what material can be hand carried to the site if it is impossible to move vehicles into a suitable location. Most of the movement of casualties into the RAP will be by Stretcher Bearers although other methods are utilized at various times. These include Jeep Ambulances, Carriers, Half Tracks, four wheeled Armoured Vehicles and Kangaroos [armoured personnel carriers]... The Field Ambulance is responsible for the collection of casualties from the RAP.[15]

In this scenario, field ambulances were assigned in more or less permanent support of individual Units."Sections of the Field Ambulance maintain contact with the RAP they are clearing and with the ADS [advanced dressing station] to which they evacuate. They are sited at the furthest point forward to which a heavy ambulance may be brought."

The ADS, or advanced dressing station, was an autonomous unit somewhere behind the RAP and the CCP (or casualty clearing post), the latter marking the forward-most detachment of the field ambulance. Where the ADS was concerned, "The site chosen must be far enough to the rear to be out of range of Infantry weapons, but close enough to the CCP that patients do not have a long and uncomfortable journey before receiving the more adequate medical attention that can be provided on this level. Good roads in and out are necessary." Further to the rear was the field dressing station, or FDS, which not only provided more care to the wounded evacuated from the front but could also specialize, becoming a special treatment centre for problems such as venereal disease or battle exhaustion. It could also form the admitting or discharge section of a casualty clearing station, which was essentially

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15. NA, MG 28, I157, Canadian Defence Medical Association, v.15, DMA, RCAMC Tactical Doctrine.

a small hospital, or combine with field surgical teams and a transfusion team to create an advanced surgical centre. (One transfusion team could support two surgical teams.)[16]

The other phases of war, pursuit and withdrawal, were the same as the deliberate encounter as far as basic organization was concerned, but there were added complexities to be taken into account in relation to actual operations. When chasing an enemy movement could be swift, so the Assistant Director Medical Services (or ADMS), who worked out of divisional headquarters, had to ensure that at least one medical unit was ready to receive casualties at all times, while others packed their equipment, moved, and set themselves up: "This usually means that the Field Ambulance moves behind the leading Brigade and on occasion behind the leading Battalion," the 1947 paper warned, a field dressing station maintaining one section in operation while another moved. Thus, where an FDS was part of a special treatment centre, it could leave its venereal disease, battle exhaustion, or other patients with a rear section while moving forward with surgical and transfusion teams. In a withdrawal, each medical unit was expected to evacuate all casualties capable of being moved, stores and personnel being left with the remainder "so that they will not be subject to undue suffering."[17]

The emphasis was thus on flexibility, and to carry out such operations the establishment of a field ambulance (in effect, its authorized strength) called for 12 officers, 16 senior non-commissioned officers (abbreviated as NCOs), and 203 other troops, for a total of 231 personnel; its transport included 9 motorcycles, 17 cars, 28 trucks, and 6 trailers. A field dressing station had an establishment of 7 officers, 10 senior NCOs, and 105 rank and file, for a total of 122. A casualty clearing station was made up of 37 officers, of whom 21 were nursing sisters, and 128 other ranks, while a field hygiene company had 223 personnel all told, a field transfusion team had 4, a field surgical team had 10, and a special treatment team had nine. The army also had establishments for a mobile ophthalmic team, a mobile ear nose and throat team, a maxilla facial surgical team, a mobile neuro-surgical team, an advanced depot of medical stores, a convalescent training depot, and an advanced blood bank.[18] This combination of flexibility in the face of complexity would characterize medical organization within Canada's fighting services until the end of the century.

This was evident when it came to organizing and issuing supplies, something as simple as stretcher design coming to the attention of the

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16. NA, MG 28, I157, Canadian Defence Medical Association, v.15, DMA, RCAMC Tactical Doctrine.
17. NA, MG 28, I157, Canadian Defence Medical Association, v.15, DMA, RCAMC Tactical Doctrine.
18. NA, MG 28, I157, Canadian Defence Medical Association, v.15, DMA, RCAMC Tactical Doctrine.

A Cadillac ambulance of the Royal Canadian Army Medical Corps in Ottawa, December 1953. National Archives of Canada, PA 113881

Inter-Service Medical Committee (or ISMC), an organization that brought together high-ranking officers from the army, navy, and air force to discuss issues of common interest. As the committee's secretary noted to the Personnel Members Committee (PMC), a similar body which dealt with personnel issues more generally, "there is an urgent need in the three Services for a standard stretcher suitable for British, United States and Canadian vehicles and aircraft,"[19] embarrassing occasions having arisen during the Second World War where one service's stretchers would not fit into another service's transport, as the disastrous 1942 raid on Dieppe demonstrated. The ISMC determined that the current ambulances were simply unsuitable, complaints including "very rough riding with serious discomfiture to the patient that in fracture cases had delayed recovery." Also cited was an "inability to adequately heat the ambulance during cold weather." The ISMC decided that "for normal peacetime use the present large box type ambulance is cumbersome and generally inadequate. The small panel types in use are totally inadequate in transporting ill patients"; most ambulances, dating from the Second World War, would have to be replaced.[20] The Inter-Service Medical Committee agreed that the Cadillac 86-491, costing $8,000, would fit the bill, though the Principal Supply Officers Committee, actually responsible for procuring such items, suggested the ISMC produce a set of specifications rather than choose a particular vehicle.

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[19] NA, RG 24, 83-84/167, 20-1-1, pt 2, S/L J W T VanGorder, for Sec ISMC, to Sec PMC, 18 Oct 50.

[20] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Lt S.T. Richards, Sec ISMC, to Sec PMC, 27 Mar 50.

A 4 x 4 ambulance, 6 March 1953. National Archives of Canada, PA 67731

The medical services soon discovered, however, that their responsibilities in peacetime covered two main spheres, the field and in garrison, a state of affairs which complicated such issues as procuring ambulances. As the secretary for the Principal Supply Officers' Committee warned, "The Members were satisfied that the requirements for field and home use cannot be incorporated in one vehicle and recognized that the existing field pattern ambulances now in use are very unsuitable for continuing home use, not only because of their design, but because of their age and mileage."[21] It found that the Pontiac "would meet all the requirements" for civilian-type use, but the complexities of procuring ambulances made it clear that the post-war medical branches would in effect be divided into two main services, one to provide civilian-type health care and another for purely military operations and training.

Added to the complications posed by different roles was Canada's geography, the country having only recently discovered that it had northern regions it might have to defend someday. In May 1950, the Director Health Services for the RCAF reported on a recent exercise called Sweetbriar, where a Bombardier snowmobile had been used as an ambulance. The army, meanwhile, had adopted a similar vehicle called the Penguin, and the Inter-Service Medical Committee agreed in principle that there was "a requirement for a snow traversing ambulance for the three services."[22]

Smaller items, such as medications and syringes, were no less complicated to handle, hence the need to create specialized medical equipment depots. No 1 Central Medical Stores, for example, was located in Ottawa, and as of 1946 was made up of its peacetime establishment of 3 officers, 27 other ranks, and 3 civilians. That year the nature of the challenge it faced became evident when "the third floor of the Cereal Building "gave way" to the weight of stock, making it necessary to redistribute about 50% of the stores throughout the building. These had to be piled in such a manner so as not to exceed 50 lbs to the square foot." Early the next year more appropriate facilities were found at Uplands airport, south of Ottawa, and though that meant staff had to commute by shuttle bus, there were compensating rewards, since "elaborate sports facilities left by the RCAF remained," so "the unit spent a very enjoyable summer at Uplands. A full size steam heated, concrete swimming pool being the main attraction, but a spacious sports field for soft ball, volley ball, and horse shoes ran a popular second." Then came another move, to Plouffe Park in Ottawa, where by the end of the decade the unit "was concentrating on returned Medical Stores from disbanded units in Canada, United Kingdom and Jamaica. These stores had to be rechecked, categorized and packaged for subsequent shipment to War Assets Corporation." It also made up field equipment packages for all three services.[23]

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[21] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, S/L A.W. Robinson, Sec Principal Supply Officers Committee, to Sec PMC, 22 Sep 50.

[22] NA, RG 24, 83-83/167, Box 7717, 20-1-1, pt 2, S/L J.D. Duncan, Sec ISMC, to Sec PMC, 29 May 50.

At the end of the Second World War, the army had had such depots in Montreal, Toronto, Winnipeg, and Vancouver, as well as Ottawa, while the navy had two, in Esquimalt and Halifax, and the air force had one in England. Then,

> Between 1956 and 1960, the regional medical equipment depots (RMEDs) were built for the purpose of housing medical supplies for both the Department of National Defence (DND) and Emergency Health Services (Canada). The locations were chosen by agreement between Health and Welfare Canada (HWC) and DND to be away from target cities, out of the reach of nuclear attacks, and within the security of a military base. Thus, the former depots were moved to the newer locations, and after 1960 there were RMEDs located at Debert, Valcartier, Borden, Shilo, Calgary and Chilliwack, with a Central Medical Equipment Depot (CMED) at Petawawa.[24]

At Petawawa was the No 1 Central Medical Stores that moved out of Ottawa in 1960. The scope of its operations and responsibility was exemplified in the transfer: "the movement of supplies and equipment of No 1 CMED, Ottawa to Camp Petawawa, was completed in seventy working days and involved the transporting of 3,796,562 lbs. To lift this quantity of stores, 16 DND vehicles, 159 Smith Transport trailers and 12 Canadian Pacific Freight flat cars and box-cars were required."[25]

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[23] DHH, 1326-1910, Historical Report No 1 Central Med Stores, 29 Jun 49.

[24] DHH 1326-1211, RMED Debert, Annual Historical Report, 27 Mar 95. In Commemoration of 31 Years of Service to Marlant Region.

As for matériel, so for personnel, and if acquiring ambulances was complicated by the fact that the medical services played more than one role, so medical officers faced the fact that they served more than one master: the service, the patient, and the medical establishments. On the issue of malpractice, for example, a case in 1946 brought a rather important question to the fore when "Legal action was taken by an ex-service person against two service Medical Officers for alleged malpractice whilst both were in the Service. It was ruled that the service would not assist in their defence."[26] The Judge Advocate General, responsible for legal matters, opined in 1947 that "As no contract exists between a Medical Officer and a Service patient, the patient cannot bring suit for breach of contract. If, however, a Medical Officer is negligent in his treatment of a member of the forces, he is liable in tort for any damages resulting from such negligence... Defence in any such action which may be brought is the personal responsibility of the Medical Officer concerned." The Inter-Service Medical Committee therefore felt that "Medical Officers should be placed in such a position that they can protect themselves either through the agency of a Commercial Insurance Company or through membership in such an association as the Canadian Medical Protective Association. In order to obtain such protection is is necessary that Medical Officers be licensed to practice in the Province in which they are serving," though, admittedly, regulations differed from one jurisdiction to the next.[27]

Such possible pitfalls could not have helped recruiting, especially given the general perception among doctors that work in the armed services required sacrifices in potential income and opportunity. In September 1946, a year after the Second World War ended in the Pacific, the Inter-Service Medical Committee met to discuss the matter, insisting that

> the lack of applicants for the Medical Services is directly due to the comparatively inadequate income offered to applicants... While the Committee is agreeable to any plan that may be proposed whereby the annual income of the Medical Officer is made comparable to that received by doctors serving in other governmental agencies, they are still of the opinion that a flat increase of $60.00 per month for all Medical Officers is required if the services are to obtain the type of officer required to run an efficient Medical Service. Alternatively they suggest that if the rates of

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[25] DHH, 1326-1910, No 1 Central Medical Equipment Depot, Annual Historical Report, 10 Jan 61.

[26] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, LCol C.G. Wood to Sec Personnel Members Ctee, 19 Sep 47.

[27] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, DMS to Command MOs, 8 Sep 47.

> pay must be left unaltered than an equivalent bonus be paid to officers of the Medical Service at the conclusion of each completed year of service. Such a bonus would amount to $720.00 per year and over a period of years would recompense the officer for his special degree.[28]

In an appendix, the committee noted that salaries offered by municipalities ranged from $4,000 to 6,000 annually, though the Municipality of Carragana paid $9,000. In addition to increased remuneration, the committee suggested short commissions of three to five years be instituted so doctors would not have to make long-term commitments, and though it did not recommend training medical officers at public expense, it agreed that some professional course-work within the service should be offered. Furthermore, the Personnel Members Committee, which among other things was responsible for health issues, recommended that "In order to attract into the Service the best type of graduates from Canadian Medical Schools, it is considered that once the question of pay has been settled, the services of Medical Officers should be so arranged that at least one third of their time is devoted to clinical work,"[29] the latter in hospitals, considered crucial for professionalization and career advancement. The rest of their time would be spent on such things as medical examinations and being on call for emergencies.

Over four years later the recruiting situation had not improved, in spite of an RCAF study favourably comparing net earnings (after deductions for office expenses and depreciation on equipment) between service and civilian doctors; it found that by age 51 an air force medical officer would have earned $162,660, while his civilian colleague would have made $158,540.[30] Perhaps the long term was not uppermost in young practitioners' minds, or possibly the RCAF's statistical methodology was less than perfect, but in May 1951 an ad hoc committee struck to study the matter concluded that three problems caused the shortage of medical officers: first, "The rates of pay in the Services are less than those obtainable elsewhere"; second, "The present rank structure does not provide a position in the Service which is commensurate with the position a doctor would hold in civilian life, nor does it provide assurance of a reasonable career"; and third, "The young doctors feel that the Services do not offer sufficient opportunity for clinical work." To come to better grips with the issues, the ad hoc committee considered the pay differential between civilian and military doctors, rank structure

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28 NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, Minutes of a Meeting of the Inter Service Medical Committee, 4 Sep 46.

29 NA, RG 24, v 7755, Minutes of the 71st Meeting of the Personnel Members Committee, 12 Mar 46.

30 NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, S/L S.S. Farrell, A/Sec ISPC to Sec PMC, 30 Apr 51.

and promotion, training and university subsidization, and retirement age of medical officers.[31]

On the issue of pay, the committee chose to set aside previous studies, noting that

> The most valid proof that Service rates of remuneration for the medical profession are below the civilian average is the fact that there is a serious shortage of doctors in the Armed Forces," and suggesting the responsibility pay of $60 per month be raised to $100 and be called "medical pay".

To make the possibility of advancement more attractive, it recommended that more positions be established at higher levels of rank, noting that the navy had 3.5 medical officers per 1,000 personnel, as did the RCAF, while the army had 4; promotion to squadron leader or equivalent (major in the army and lieutenant-commander in the navy) after five years was deemed adequate. Looking into university subsidization, the committee found that the decision not to include fees and books in the armed services support packages influenced some applicants to go elsewhere, while the lengthy period of professional education made the current retirement age of 51 too low. (Such regulations applied to those who reached the rank of Wing Commander Non-Flying or equivalent—they actually varied from rank to rank.) Finally, to make the army, navy, and air force more attractive as careers, it was suggested that the current system of offering a year's post-graduate training in each five years of service be continued, while

> The Committee also recommends that medical officers be rotated through service appointments which offer the best professional experience and that the policy regarding the care of male and female dependents be reviewed with a view to providing opportunities for more general experience than is possible under present conditions.[32]

The ad hoc committee's report was well received. The Personnel Members Committee accepted it without reservation, except to add that "the foregoing recommendations are being made only because of the current shortage of medical officers and, if this principle is accepted, it must be understood that the same principle should apply in case of a shortage of officers in other Branches, such as Electrical Engineering, etc."[33] Also acceptable mainly because of a shortage of medical officers was a campaign to recruit them in other countries, notably Great Britain.

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[31] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, A/C F.G. Wait, Chair Ad Hoc Ctee, to Sec PMC, 9 May 51.

[32] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, A/C F.G. Wait, Chair Ad Hoc Ctee, to Sec PMC, 9 May 51.

[33] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, MGen W.H.S. Macklin, Chair PMC, to Sec Def Council, 14 May 51.

Lieutenant (Nursing Sister) Elizabeth Hodgson, Lt (N/S) Margaret Wallbank, and Lt (N/S) Dorothy Gerow in the laboratory of the Royal Canadian Army Medical Corps School, in Camp Borden, 23 April 1948. National Archives of Canada, PA 129103

According to an anthology of RCAF biographies, an officer named Sandy Watson suggested "to the Director General Medical Services (Air) that he could persuade twenty recent graduates in Medicine from Scotland to immigrate to Canada to join the RCAF Medical Branch. Medical graduates in Great Britain were obliged to serve two years "national service" with Britain's armed forces, whose pay was extremely low. In four weeks, Sandy was able to persuade thirty Scots medical graduates to join the RCAF and come to Canada. They provided excellent medical services and eighty percent of them remained here and became Canadian citizens."[34]

One group that remained untapped in this period was women, perhaps because the latter had their own perceptions about their acceptance in the armed services, or perhaps because recruiters had their own views about female doctors in their medical branches. There was, it turns out, no legal impediment to women joining as doctors, the Vice Adjutant-General noting in 1951 that "the Army has received an application for enlistment from a woman doctor. He wondered if any policy had been established with regard to the enlistment of female doctors and if the Navy and Air Force would have any objection to the Army accepting her application." There was none.[35]

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[34] Harold M. Wright, *Salute to the Air Force Medical Branch on the 75th Anniversary, Royal Canadian Air Force* (Ottawa, 1999), 195.

[35] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, Extracts from the Minutes of the 315th [?] Meeting of Personnel Members Committee, 1 Mar 51.

Women joined the armed services in far larger numbers as nursing sisters, a branch in which they could serve as officers in accordance with a turn-of-the-century general order. Standards of entry were as high as for doctors, though the pay was similar to that of civilian practice, where nurses were remunerated at far lower rates than MDs. Recruiting was thus not the problem it posed in regards to medical officers, and in late 1948 the DND's Deputy Minister, W. Gordon Mills, could reply to an enquiry from the Canadian Nurses Association that "all members of the Nursing Services are graduate nurses." Although, technically, "a member of the Forces is deemed to be on duty 24 hours a day," in practice working hours in military hospitals varied: "a 10 hour day covering a 12 hour period with 2 hours off is the general rule. Two days off duty are allowed in a two week period," while, "in those hospitals integrated with the Department of Veterans Affairs time off duty conforms with that of the nurses employed by the DVA." As for general personnel policy, "the number of nurses employed by the Services is fixed by the overall planning requirements," and "provision is made by each Service for an adequate number of nurses to obtain post graduate courses,"[36] though the word "adequate" was not defined.

Career advancement, at least in the immediate post-war period, might in fact be a matter for concern. In 1946 the army's Director-General Medical Services requested the rank of the Matron-in-Chief of the Army Nursing Services be increased from major to lieutenant-colonel, "in order to equalize the rank with that provided in the Naval Service (Commander)." The latter was one of 41 nursing sisters, while the army's equivalent was one of 72 (the RCAF had a flight lieutenant for 38 nursing sisters): "From the Army standpoint, the rank of Maj[or] is satisfactory, except when considered in relation to the rank of Matrons of other Services. There should, however, be consistency as to the ranks between the other Services concerned, and an agreement on such should be reached through PMC," or Personnel Members Committee.[37]

It was not until 1953 that the issue was resolved at higher levels, when the Inter-Service Medical Committee agreed that in regards to the navy's Senior Nursing Officer, the army's Matron-in-Chief, and the air force's Principal Matron, a commander, a lieutenant-colonel, and a wing-commander's position would be established, all to be called "Matron-in-Chief" of their respective services. As the committee explained, "The Matron-in-Chief is responsible for the selection, training and supervision

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36. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, W. Gordon Mills, DM, to Gertrude M. Hall, Gen Sec-Treas Canadian Nurses Assoc, (draft) 8 Nov 48.

37. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, Capt C.H. Graham, EA to AG, to Sec PMC, 22 Aug 46.

of the nursing sisters, physiotherapists, dietitians, and laboratory technologists in the Regular Force and in the Reserve Force." An additional consideration was the fact that "The dispersion of these Sisters, some of whom are serving overseas, together with the multiplicity of problems in relation to their postings, administration, and maintenance present an entirely different problem than that handled by any civilian matron whose nurses are employed for a stated number of hours and then are independent of any control in off-duty hours and whose administration and maintenance is a personal problem." There was also an international context to consider, and

> In view of the increasing overseas commitments which the Canadian Forces have to cope with, a comparison with other Commonwealth countries and the United States, with reference to rank structure of nursing services was made, and it was decided that the Canadian Services were proportionately low...
>
> DGMS (Army) mentioned the British Commonwealth Hospital in Kure, Japan. Posted in this hospital are a British Matron Lieutenant-Colonel, an Australian Matron Lieutenant-Colonel, and each ward is in charge of a Major Nursing Sister. The Canadian Matron at the hospital is a Captain Nursing Sister...
>
> The Members agreed that this discrepancy in senior rank, both at home and abroad, make liaison and co-operation extremely difficult.[38]

Operating alongside allies, then, might benefit the higher-ranking members of this particular branch.

For lower-ranking officers, simpler issues led to more standardized promotion practices, though in 1950 the RCAF's Director Health Services reported that "each Service had different regulations regarding the time in which officers entered into the Nursing Branches were eligible for first promotion." The Inter-Service Medical Committee, for its part, agreed that "the time requirements in each case should be identical since it materially affected recruiting in each Service." As it stood, a nursing sister in the army waited three months to advance from second-lieutenant to lieutenant, a nursing sister in the navy had to wait six months to be promoted from acting sub-lieutenant to sub-lieutenant, while the air force insisted a year go by before promotion from pilot officer to flying officer. The committee recommended the probationary period be three months in all cases, as "It was felt that this time period would be sufficient for assessment and would be comparable to civilian procedure and wage adjustment."[39]

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[38] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Lt C.A. Brown RCN, Sec ISMC, to Sec PMC, 26 Jan 53.

[39] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Lt S.T. Richards, Sec ISMC, to Sec PMC, 30 Jan 50.

Doctors and nurses together formed a group that had served in the armed forces for decades—even centuries—but the Second World War had seen the recruitment of an increasingly long list of more recently evolved specialists whom the services continued to require in time of peace. Among them were pharmacists, and in 1948 the Inter-Service Medical Committee concluded that "the responsibility assumed by such personnel in a surgical hospital requires that he be of commissioned rank. Both the Air Force and Navy have recognized this responsibility and have authorized establishments for Commissioned Pharmacists in their surgical hospitals. The Committee noted that the Army only had NCOs filling similar vacancies, and that while this is satisfactory where integration with DVA has taken place, the situation with regard to Kingston, Toronto, and Whitehorse," which were strictly service and not veterans' hospitals, "is not satisfactory."[40]

It remained so, at least for a time, and over a year later the committee had to note that

> no standard policy has been adopted within the three Services covering the rank of Pharmacists on enlistment or appointment... They are the only technically qualified personnel with a University degree who in pursuit of their calling enter the Services below commissioned rank. On considering this situation it becomes apparent that with some justification it can be said that discrimination has been shown against the Pharmacist. The Canadian Pharmaceutical Association, Inc, have been aware of this for some time and it will not be long before representation will be made to correct this anomaly.[41]

It therefore recommended that those with PhmB degrees be commissioned, although "Those Pharmacists now serving below commissioned rank who by virtue of their age would suffer should they be commissioned, should be of the rank of WO 1 or its equivalent," which is to say Warrant Officer I, the highest rank possible for a non-commissioned officer.

Dietitians, physiotherapists, occupational therapists, and laboratory technologists also sought increased status and pay; the ISMC reported in 1953 that "the authorized establishment for these officers have not been filled and are not likely to be filled due to the lack of career opportunities. This group of officers are required to hold a university degree before appointment to a commission. The rank structure in each Service varies to some extent." It therefore agreed "that a common rank structure and system of automatic promotion up to and including the rank

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40. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, LCol C.G. Wood to Sec PMC, 8 Jan 48.
41. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, Capt M.L. Jeffery, Sec ISMC, to Sec PMC, 26 Mar 49.

of Lieutenant Commander, Major, and Squadron Leader should be established,"[42] though the recommendation was somewhat controversial; the Personnel Members Committee suggested that "some invidious comparison of rank and responsibility might occur when such officers were promoted under the automatic system to ranks that would be higher than those which will be held by hospital matrons who are charged with the overall hospital responsibility."[43]

The issue was thus passed on to the Personnel Members Administrative Committee (PMAC) for resolution, the army representative relating how it had a total of 163 such officers, all women, of whom sixteen had requested releases to get married in the first two months of 1953: "The Army does not favour automatic promotion," he insisted, though it was willing to change its establishment for dietitians and others from two captains and sixteen lieutenants to a major, four captains, and thirteen lieutenants. The committee as a whole agreed that increased rank was not the answer, pointing to the RCAF's experience, which, since "pay is now compatible with civilian rates," focussed on "an increase of recruiting advertising pointing out that the girls in the Service are normally better off than their civilian counterparts."[44] No one pointed out that these were, in fact, women and not girls the services were recruiting, but then again these were institutions who referred to 35-year old technicians as "boys."

Lest the reader be misled into thinking that all specialists in the various medical branches achieved officer status in the immediate postwar period, it is useful to note here that at least one group, dental nurses, failed to achieve such recognition. Their case was no less compelling than those related above—at least on the surface—one letter to the Minister of National Defence pointing out that they operated "a long way from their basic unit," and hence had to rely on their knowledge and initiative, though

> between the Civil Service, Army and Air Force their status has not been defined. While this is not of concern to the Civil Service, it is to the Armed Forces, and evidently girls with teachers' certificates and nursing training are classed as officers, whereas the new dental nurses continue to remain unclassified, and without the privileges of the officers' mess, while their educational qualifications are as good and in many cases better than the above.

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[42] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Lt C.A. Brown RCN, Sec ISMC, to Sec PMC, 26 Jan 53.

[43] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, F/L G.A. Woolley, Sec PMC, to Sec Personnel Members Administrative Ctee, 11 Feb 53.

[44] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Minutes of the 264th Meeting of the Personnel Members Administrative Committee, 6 Mar 53.

Brigadier H.L. Cameron, the Defence Secretary, noted to the Personnel Members Committee that, given only 150 dental nurses graduating each year, an increase in their status might be beneficial both to them and to the armed services.[45] The PMC was, however, unimpressed, insisting that these specialists carried out duties akin to those of non-commissioned officers, and were hence not to be assigned commissioned officer rank.[46]

For others, the situation was worse still, a consequence of the army, navy, and air force having accepted the standards of the Canadian Medical Association and similar institutions in choosing their practitioners. Such was clear when the Dominion Council of Canadian Chiropractors wrote to Brooke Claxton, the Minister of National Defence, in 1951: "The young men of the Chiropractic profession, being concerned about world conditions, wish to serve Canada in time of emergency to the best of their ability," the letter insisted, suggesting that "It would be an utter waste of skill and knowledge to have these young men in the armed forces in any capacity other than as Chiropractors."[47] The ISMC, however, saw things differently, writing the Defence Secretary in no uncertain terms that

> The present policy ... is such that advice upon any medical procedure is obtained only from a fully qualified medical authority... Any deviation from this policy may only be effected following careful consideration of the possible implications on standards of treatment and legal status and provided there be no contravention of the ethical and professional precepts of the Royal College of Physicians and Surgeons of Canada... [I]t is the considered opinion of the Inter-Service Medical Committee that chiropractors cannot be accepted in their proposed status within the Medical Services of the Armed Forces of Canada.[48]

There was no room for the delivery of what would later be called "alternative" health care.

The aim of such planning, doctrine-writing, logistics, supply depots, and personnel organization was, of course, to provide mainstream medical service to the armed services—and some others, as we shall see. A discussion of the various facets of this endeavour in the five years following the Second World War would fill a book on its own, so only a few illustrative examples can be provided here. One that had proven a challenge since at least the First World War was the treatment of venereal disease, though in dealing with the illness medical practitioners had to take into account their dual role within military and civil society. In 1948 the Judge Advocate General, ruling on the advisability of disclosing the condition of a venereal disease patient, opined that "Service medical officers, if acting in the course of their duty, do not render themselves liable to either civil action or criminal prosecution in giving such information to Dominion or Provincial Health Authorities." In fact, "there is no regulation now existing under which a medical officer of the Armed Forces is permitted to withhold such information if he is subpoenaed by a court of law and questioned as to the occurrence of VD, in a serviceman..." even after the patient left the service. However, the Judge Advocate General ruled, "It is considered NOT to be in the interests of the serviceman or ex-serviceman that any history of VD be given to any person under any circumstance except to Dominion, Provincial or Municipal Health Authorities or to the personal physician of an ex-serviceman."[49] The Inter-Service Medical Committee, therefore, recommended regulations be drafted to ensure such information be disclosed only under the conditions cited by the Judge Advocate General.

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[45] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, Brig H.L. Cameron, Def Sec, to PMC, 30 Jan 51.

[46] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, Extracts from the Minutes of the 514th Meeting of Personnel Members Committee.

[47] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, Dominion Council of Canadian Chiropractors to Brooke Claxton, 16 Apr 51.

[48] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, Chair ISMC to Def Sec through PMC, 8 May 51.

The armed services had learned through long experience that the best approach to venereal disease was medical treatment, disciplinary measures having proven less than successful. In 1952 one senior staff officer, Lieutenant-Colonel T.H. Carlisle of the Directorate of Administration, provided a history lesson, relating that in the First World War "An order was issued for the CEF to the effect that if a soldier was hospitalized for more than four months (which need not be consecutive) for VD, such hospitalization would render him liable for reduction in rank..." In order to control the disease in the interwar period, units had to publish in their regulations "an order stating that personnel suffering from VD must report themselves on sick parade and failure to do so would render them liable for an offence under Army Act Section 11 (neglecting to obey Standing Orders)..." Patients also had to pay a fine, referred to as hospital stoppages, ranging from $2 per day for officers to 30 cents for boy soldiers. During the Second World War the regulation remained in effect, though fines could only be imposed by summary trial or court martial; hospital stoppages, however, were automatic—they were not abolished until 1951. As of the latter date Queen's Regulations (Army) stated, in article 19.18, that "An officer or man who is suffering or suspects he is suffering from a disease shall without delay report himself sick," and stoppages could be imposed under article

[49] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, LCol C.G. Wood, Sec Inter-Service Medical Ctee, to Sec Personnel Members Ctee, 23 Jan 48.

208.31 for "no service rendered." Disciplinary measures had not, however, proven effective—quite the contrary—the Lieutenant-Colonel concluding his report with the comment that "it has been found that any imposition of penalties for concealing the disease serve mainly to drive the disease underground—it [is] not a cure and it is doubtful if it reduced the incidence of VD to any appreciable extent."[50]

Another controversial medical issue was immunization, which exemplified the clash between service discipline and individual rights that has remained somewhat unresolved to this day. In the First World War, there was an active anti-vaccination group advising soldiers to refuse inoculation, though in the next world conflict the procedure seems to have raised far fewer questions. By the post-war period, it had come to be generally accepted, though there could still be some hand-wringing involved in its imposition. Such was the case with the anti-tuberculosis vaccine BCG (Bacille Calmette-Guérien, named for the researchers who developed it). Some proponents, such as the Saskatchewan anti-TB league, recommended every member of the armed services be injected. The matter was referred to the Defence Research Board's Subcommittee on Preventive Medicine for evaluation, and based on its report the Inter-Service Medical Committee concluded that "in peace, BCG vaccination should be strongly recommended to those ... personnel whose duties bring them into contact with open cases of tuberculosis, viz the staffs of hospitals which admit tuberculosis patients." The ISMC, however, "Did not agree that in war BCG vaccination should be a part of the regular immunization schedule ... that the administrative difficulties introduced by such a program would outweigh any benefits which could reasonably be expected from it."[51]

When it came to immunization, the medical services had to pick and choose which disease to vaccinate against; otherwise each serviceman and woman would become a veritable chemical storage tank. One that ranked high on the list of priorities was typhus, which "throughout history formed a threat to the health of armies in the field, and will continue to do so in the future in any theatre." In the Second World War a vaccine against two types of typhus, epidemic and murine, had provided "reasonable protection," although the Inter-Service Medical Committee had to report that there was "no suitable vaccine for protection against scrub typhus, the type most likely to be encountered in some Asiatic theatres." Another problem was logistical:, vaccine against the epidemic and murine forms of typhus was increasingly difficult to obtain. As

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[50] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, LCol T.H. Carlisle, Adm B, to D Adm, 30 May 52.

[51] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, S/L J.W.T. VanGorder, Sec ISMC, to Sec PMC, 31 Jan 51.

Brigadier W.L. Coke, chair of the ISMC, explained, "The vaccine now available is used almost exclusively by the Armed Forces, and since 1945 and until recently the demands have not been great. With the increase in overseas activity ... the demand is increasing, and Connaught Laboratories, the only source of supply in Canada at the moment, is hard pressed to meet this demand." After liaison with the Defence Research Board, the ISMC requested $10,000 for Canadian research towards producing a more effective typhus vaccine.[52]

Along with many other issues, venereal disease and immunization had one thing in common—they dated back decades—but this was not the case with dependents' care, a consequence of the armed services maintaining relatively large forces in peacetime. People were joining up not for a few years but for a career, meaning they would not postpone having children, not put up with long-term separation from their loved ones, and not remain in the forces if service proved to be too great a hardship on their spouses and families. The absence of any government-sponsored insurance scheme led to experiences such as those of Patricia Gill:

> Following a post-graduate course in obstetrics nursing at the Margaret Hague Maternity Hospital in Jersey City, NJ, and a short hospital working experience, I joined the RCAMC, in 1952. When dependent care was initiated at some of the camps, I was posted to the military hospital at Camp Shilo, Manitoba, to set up the obstetrical unit there. The QM [or quartermaster] was constantly amazed at the weird-seeming supplies being requisitioned from him.

Leaving the service to get married, Gill was back in the Camp Shilo hospital some time later—to give birth to her first child: "The amazing bit was that the MO on duty when I was in labour was fairly newly posted and hadn't delivered a baby in fifteen or more years. She sat beside me reading a manual and saying, 'Pat, I'm so glad you're a nurse—you can tell me exactly what's happening'." Though the medical officer in question was in fact a close friend, Gill later related how "that night I could have killed her!"[53]

The issue of providing medical services to dependents is of some importance to this study, and it is worth looking ahead somewhat to see, briefly, how it evolved in the years that followed. For example, Lois Clarkin, a Registered Nurse, wrote to Paul Martin, the Minister of Health and Welfare, about working conditions on one of Canada's far-flung stations in the mid 1950s. She noted that in the Permanent Married Quarters' area on one base in Germany, "We have here one Army doctor and one Nursing sister trying to look after the health needs of over 600 families. I am not familiar with their policies and this is an entirely new set up for the Medical officers but I believe if they hope to do any type of Public Health they should at least have an MO and a Nursing Sister to assist him with the acutely ill and a trained Public Health Nurse for schools, clinic work, teaching and home visiting."[54] In response, Lieutenant W.A. Walsh of the Inter Service Medical Committee advised that "the Army has made provision for three medical officers and three nursing sisters to look after approximately 1500 families of Servicemen in Germany. RCAF proposal for dependents health services in France has been submitted through Air Force channels and when approved will provide a measure of care comparable to that provided for Army dependents in Germany." When the set up was complete, health care for dependents overseas would be equivalent to what was available in Canada—or so it was hoped.[55]

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[52] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, Brig W.L. Coke, Chair ISMC, to Sec PMC, 2 Apr 52.

[53] E.A. Landells, ed, *The Military Nurses of Canada: Recollections of Canadian Military Nurses* (White Rock, BC, 1995), 499.

Reality did not immediately match this expectation, however, and the following year the Personnel Members Administrative Committee reported that members had "discussed the hardship that is being inflicted on members of Forces whose dependents contract crippling, contagious, or mental diseases while serving outside their home province, and who, by reason of lost residence privileges, are denied the assistance that they would otherwise receive" through provincial and municipal welfare programmes. After some discussion, "while the appropriate benevolent fund had taken action in some cases ... the Federal government had a moral obligation to the Servicemen because these men were serving outside their home provinces on orders from the Department of National Defence." They instructed that an extensive survey be conducted.[56] When provincial health care insurance schemes were introduced, medical care for dependents was gradually transferred to civilian agencies in the 1970s, "except for those units where care was not available elsewhere."[57]

The medical branches thus played two roles, one civilian and one military, and dependant care was definitely an instance of the former. An excellent example of the latter in the immediate post-war period was search and rescue, abbreviated as SAR. One of those to enter this field in the early years was Herbert Fader, nicknamed Dutch, who joined the RCAF in October 1947, qualifying as both a medical assistant and a laboratory assistant in the following months: "Dutch received specialized training in para-rescue, air search and rescue, and survival training. He also worked as an instructor in para-rescue and survival training." However,

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[54] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Lois Clarkin RN, to Paul Martin, Min H&W, 28 Feb 55.

[55] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Lt W.A. Walsh, ISMC, to Sec PMC, 18 Mar 55.

[56] NA, RG 24, 83-84167, Box 7718, 20-1-1, pt 8, Extract from the Minutes of the 384th Meeting of PMAC, 13 Jan 56.

[57] Col Marielle Gagne, Address to Nursing Sisters Association, 10 Jun 94, in F.A. Landells, 538.

> The working conditions in para-rescue for medical personnel was [sic] rather different than for non-medical search and rescue (SAR) specialists. Those in other than medical trades were attached to a squadron for their SAR duties and training, to which they could devote most if not all of their day. The medical SAR specialists' primary duties were to the medical facility … Medical commitments frequently prevented them from joining their non-med colleagues for operations and exercises. A great deal depended on co-operation between the Senior Medical Officer and the Senior Air Operations Officer if the medical SAR specialists were to be given sufficient training to stay current.

It was three decades before this problem was solved, "with the formation of the Search and Rescue Technician (SAR Tech) Trade in the early 1980s."[58]

Still, operations were more challenging than organizational issues, as Grace Woodman could relate after one mission:

> In July 1952, just one month after completing the five-and-a-half-month course of which most was outdoors, she made her first operational jump and reputedly a world first for para-rescue jump by a Nursing Officer… A team of three rescuers was sent into the rocky slopes of Mount Coquitlam about thirty miles north of Vancouver to rescue an injured surveyor from a geology party. The casualty was reported to have a fractured pelvis and punctured lung.

Along with Woodman, the other members of the team were Squadron Leader Dick Wynne, a para-rescue trained doctor, and Sergeant Red Jamieson, a full-time para-rescue safety equipment supervisor. The rescue was historically significant:

> This was the first operational jump by a doctor and nurse and jumpmaster team. On the drop, the three became separated because of high winds. The team landed into high trees and Grace became entangled in branches about 125 feet from the ground. She carried 'let down' ropes for just such an eventuality, but the rope was only one hundred feet long, leaving a drop of twenty-five feet to the ground. Wynne and Jameson managed to make it to the ground and were able to contact each other by shouting, however Woodman was too far away from the team to hear or to be heard.[59]

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[58] Harold M. Wright, 139.
[59] Harold M. Wright, 146.

According to the nursing sister,

> I managed to get myself untangled from the tree and to secure my let-down rope. However, in attempting to get untangled, I lost my gloves. The descent on the 100-foot rope, which should have been slow and easy, tended to be a bit faster than I would have liked. The speedy descent, holding the rope in my bare hands, was so painful that I had to let go and risk the chance of injury. All my fingers had deep burns and I had a deep, large gash across my left palm. The wind was knocked out of me and it took me a while to breathe at somewhere near a normal rate.
>
> Although my right leg was painful, there was no sign of bleeding on my jump suit. My lower back and thoracic area were uncomfortable. I stood up, collected my belongings and started up the mountainside. By this time I had lost the little bit of daylight that was left and it was getting dark. I retraced my steps back to my parachute to avoid getting lost in the dark. Meanwhile, the pilot of the jump airplane kept circling until well after midnight giving me the direction that I had to take since I was separated from the other two. The country was very rough and was known to be inhabited by cougar and grizzly bear. However, the sound of the airplane motors probably scared everything away. I was so tired at this point that I crawled under a bush and fell asleep. Around 5 a.m. the following morning, I was awakened by the sound of the search airplane and by Wynne and Jamieson calling out to me. I found my gloves at the foot of the tree and put them on to protect my burned and injured hands.[60]

Finally, guided by a circling DC-3 Dakota cargo aircraft, Wynne and Jamieson located Woodman, the team continuing to provide care to the injured geologist until the US Coast Guard sent in a helicopter to evacuate them all.

J.R. Dick Wynne, the doctor in the operation, later recalled several such missions. Joining the RCAF as a medical officer in 1950, he took the para-rescue course in 1951, becoming Senior Medical Officer at RCAF Station Comox, in British Columbia, in 1952. According to Harold M. Wright's collection of RCAF medical biographies, in the next two years Wynne took part in two operational jumps: "The first was in the coast range of the Rockies to rescue an injured geologist in July 1952," related above, "and the second in June 1953 to tend a seriously ill officer of the Royal Canadian Mounted Police at Coppermine in the Northwest Territories... no aircraft could land on the thin ice of the lake as it was just about to break up." After an examination, Wynne concluded that the patient had tuberculosis, a diagnosis later confirmed: "With the help of a para-rescue Medical Assistant named Sergeant Jack Strachan, S/L Wynne aspirated the lung to make breathing easier and then stayed with the patient until the lake was sufficiently open to allow an RCMP Noorduyn Norseman float plane to come in and evacuate the patient and team to Yellowknife in the Northwest Territories. Wynne recalls that the situation called for basic medicine with no X-rays. There was a quick turnaround at Yellowknife to a Beech 18 "Expeditor" aircraft for the last leg of the trip to Edmonton, Alberta."[61] It was a far cry from civilian medical practice.

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[60] Harold M. Wright, 146

The medical services were thus learning just how challenging peace could be. They had to prepare for a possible future war in which nuclear, biological, and chemical weapons might be brought into play. They also had to provide medical care and preventive medicine to members of the armed services and to their families as well, while conducting operations such as search and rescue. Through it all, they had to prioritize supplies and equipment while recruiting and training the personnel they required for the myriad tasks that together made up their role. Then, while they were learning to deal with the challenges posed by peacetime, war broke out half a world away.

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[61] Harold M. Wright, 153

Chapter Two

Korea

The period of preparing for war in time of peace lasted, for the medical branches of Canada's armed services, only five years; then, in June 1950, North Korean divisions crossed the border with their southern neighbour to unify the peninsula by force. The United States reacted with the despatch of troops from Japan, the United Nations provided an international support structure for the US action, and Canada prepared to send elements of the army, RCN, and RCAF to the scene of battle. It would last three years, in a topography that reminded some participants of the 1943-45 Italian campaign and in a form reminiscent at times of the trenches of the First World War. The medical services would apply the lessons of the victory campaign of 1944-45, but as we shall see, never achieve the breadth of operations (they would never deploy their own field hospital, for example) they had managed in the last year of the Second World War.

This issue was, however, only of concern to later historians. At the time, "In Parliament, all three parties welcomed news that three RCN destroyers would sail at once from Esquimalt. Then they stood down for the summer. In August, with UN forces pinned down in a narrow beachhead around Pusan, the cabinet ordered the RCAF's only long-range transport squadron to join the American air bridge to the Far East. More reluctantly, the government agreed to send an infantry brigade group."[1] It was less reluctant when it came to spending on defence, the 1953 budget reaching almost two billion dollars, ten times what it had been in 1947. Generally, according to historian Desmond Morton,

> Canadians accepted rearmament. Times were prosperous. In the universities and the CCF [predecessor to the NDP], the old liberal traditions

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[1] Desmond Morton, *A Military History of Canada: From Champlain to the Gulf War* (Toronto, 1992), 234.

> of pacifism and isolationism survived but some of the scholarly heroes of an earlier and isolationist age, like Frank Underhill and Arthur Lower, had enlisted in the Cold War. Canada's few defence analysts were rarely critics... Canada, in the 1950s, could apparently afford both guns and butter and, indeed, there were influential economists who insisted that spending on guns helped put butter on Canadian tables.[2]

It was, as we shall see, the beginning of a decade-long golden age for the fighting services.

The Royal Canadian Navy in Korea, as it had in previous conflicts, fought a war much removed from the army and air force. Doctors were few and far between, the navy having to compete for recruits with the other two services and Canada as a whole. They were at a distinct disadvantage as few medical practitioners were prepared to go to sea for months at a time when there were so many more pleasant alternatives; furthermore, the war against the North Koreans (and, eventually, the Chinese) somehow failed to capture the public imagination in the same way as the crusade against the Nazis. In any event, recruits with the necessary medical skills were sufficiently rare that when one presented himself, in the words of RCN historian Edward C. Meyers, "He was pounced upon with the swiftness of an eighteenth-century press gang."[3]

This explains why a complete impostor, Ferdinand Demara, could join Canada's naval service as a surgeon with the stolen credentials of a Doctor Joseph Cyr of New Brunswick. As had his predecessors in the Second World War, however, he found that his duties aboard HMCS *Cayuga* were mainly routine steam burns, cuts, rashes, and similar complaints. He was also fortunate in having as his assistant Petty Officer Robert Hotchin, whose medical education was not much short of that of a general practitioner ashore. Still, the doppelganger, as Cyr, handled even the more stressful aspects of the job well: "The ship's records show Demara to have performed several operations during a two-month period" as *Cayuga* supported South Korean amphibious raids against the North, "ranging from the amputation of a gangrenous foot to the removal of bullets from arms and elsewhere. He operated quickly and efficiently, and gave no one any reason to question his talents as a surgeon."[4]

His moment of glory came in September 1951. After a raid by South Korean commandos, called Salamanders, on the 7th, three of the raiders were left seriously wounded and by the 10th were close to death.

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2. Desmond Morton, 238.
3. Edward C. Meyers, *Thunder in the Morning Calm: The Royal Canadian Navy in Korea, 1950-1953* (St Catharines), 168.
4. Edward C. Meyers, 170.

> Demara took one look and made a snap decision. He ordered the startled Hotchin to bring his surgical equipment to the upper deck at once. He quickly explained that he felt at least one would die while awaiting his turn in the sick bay. By treating all three at once, he might be able to pull them through. Demara did an admirable job. The worst of the three would surely have died had treatment not been swift and expert. By the time he had finished he had collapsed the lung and removed a bullet from the man with the chest wound while successfully treating the other two as well. Demara had indeed saved the three men, but the greatest feat was the work he did on the chest wound. While the collapse of a lung might have been accomplished by any qualified medical assistant, Demara had known exactly what to do and how to do it.[5]

The result, however, was publicity, exposure by the real Doctor Cyr, and a quiet dismissal from the RCN—or almost. Some three decades later, Demara attended a reunion of *Cayuga*'s complement, where "he was greeted with warmth by those who had known him as a friend and shipmate twenty-eight years before. The welcome made it obvious that Demara had made no enemies aboard *Cayuga*. By all accounts he enjoyed the party."[6]

* * *

Organization: Medical Staff Officers Army

Director-General Medical Services at National Defence Headquarters
Assistant-Director Medical Services at Divisional Headquarters
Deputy-Director Medical Services at Brigade or other formation headquarters
Medical Officers with units in the field

* * *

As for the land war in Korea, with the passage of time Canada's contribution grew in size and complexity. With Britain, Australia, New Zealand, and India, Canada formed the 1st Commonwealth Division, within whose headquarters some Canadians, including a Senior Roman Catholic Chaplain, would serve as staff officers. Others formed a "brigade group," the expression itself an indication of the sophistication of the Canadian commitment, as it designated a formation not only of infantry but of supporting arms including a squadron of armour, a field artillery regiment, a squadron of engineers, a brigade signal squadron, a transport company of the Royal Canadian Army Service Corps, an ordnance workshop, a workshop of the Royal Canadian Electrical and Mechanical Engineers, a military police "provost' detachment, and, of course, a field punishment camp to house those whose level of discipline was less than exemplary. Nor was that all: some officers served at

[5] Edward C. Meyers, 172.
[6] Edward C. Meyers, 176.

a Canadian Military Mission, Far East, in Japan, as well as a Canadian Base Unit, Far East, incorporating logistical units.[7] The Army was by far the country's largest contributor to the Korean War, 21,940 of its members serving there, of whom 1,543 suffered wounds on the battlefield.[8]

Treating the sick and wounded required a medical system as complex as the military organization it supported. Sometime in 1950, Brigadier K.A. Hunter and Colonel J.E. Andrew reported on the way the Royal Canadian Army Medical Corps had organized forces for Korea in the first months of the conflict. With the formation of the 25th Canadian Infantry Brigade went the 25th Canadian Field Ambulance, medical officers also being attached to other infantry and artillery components; each combatant unit had medical NCOs to provide first aid and handle such items of routine as morning sick parade. Later, with the formation of the Commonwealth Division, Canada organized a field dressing station "capable of providing a firm base for the operations of Surgical Teams and Transfusion Teams and thus providing what is, in effect, a small hospital for the definitive care of wounded soldiers." When all was in place, Canadian personnel were "available for the care of Canadian casualties at all levels from the time of wounding until the casualty had reached the base hospital in Japan," and if evacuation to Canada was necessary, the US Air Force's medical service was available.[9]

Finding medical practitioners for all these units was not an easy task; we have already seen how the peacetime medical services were capable of expanding for war only in potential. The Director-General Medical Service for the Army warned the Inter-Service Medical Committee in September 1950 that civilian doctors were still not enlisting in adequate numbers.[10] The matter was referred to the Defence Medical and Dental Services Advisory Board, which had little in the way of good news to offer. The chair, Surgeon Captain Archibald McCallum, noted that "aside from the needs of the Special Force, consideration would also have to be given to the Medical Branches on the whole which seemed to have little appeal to Canadian doctors," and drew attention to a spreadsheet that "showed that the preponderance of those now in the permanent forces were veterans of World War II; another substantial number were drawn from the United Kingdom (both veterans and non-veterans) and that out of a total of 191 medical officers only 5 non-veteran Canadians had been entered into the force for Korea, "and only 4 dentists out of 136 were in this class." The Minister of Defence, also present at the meeting, suggested that Korea had broken out too suddenly for medical personnel requirements to be met from university training programmes, and that the acceptance of undergraduates in their final year was being extended to non-veterans as well as veterans.[11] Generally speaking, however, solutions could not be other than long-term in nature.

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[7] Herbert Fairlie Wood, *Strange Battleground: The Operations in Korea and their Effects on the Defence Policy of Canada* (Ottawa, 1966), Apps D.

[8] G.W.L. Nicholson, *Seventy Years of Service: A History of the Royal Canadian Army Medical Corps* (Ottawa, 1977), 267.

[9] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

[10] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, S/L J.W.T. VanGorder, for Sec ISMC, to Sec PMC, 14 Sep 50.

Meanwhile, there was a mobilization to cope with, complete with the breakout of epidemics that had plagued such operations for millennia. Harold M. Wright, who would eventually rise to the rank of Lieutenant Colonel, joined the RCAF at this time and was posted to No 1 Manning Depot in St-Jean, Quebec. According to his later recollection,

> Compounding the problems of the large number of recruits coming into the Manning Depot, an epidemic of influenza broke out. The illness raged through the barracks and the spread of the virus was increased by the open sleeping quarters and proximity of the two tiered bunks. Airmen and airwomen reported sick at the hospital in droves.

Medical staff determined that treatment should focus on relieving one of two types of symptoms:

> Medication was pre-packaged in paper bags numbered #1 and #2 to deal with each category. After patients had their temperature taken, they were formed in a line at the pharmacy wicket. A doctor examined each patient's throat and, based on his examination, he would simply say #1 or #2 and the pharmacist would issue a paper bag containing the appropriate treatment items. It was a form of mass treatment that worked well for the majority of cases. More serious cases were hospitalized.[12]

A further problem was revealed after units arrived in Korea; the Canadian Section at the British Commonwealth Hospital wrote as late as July 1952 that

> We would like to enter a plea for more careful screening of personnel... During the month of July we have had occasion to recategorize another recent arrival in this theatre who had had a nephrectomy [surgical removal of a kidney] performed previously. There have been several arrivals with long-standing histories of bronchitis or asthma—one of whom was on embarkation leave within a week of discharge from hospital in Canada—diagnosis: Acute Bronchitis with Asthma.[13]

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[11] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Minutes of the Second Meeting of the Defence Medical and Dental Services Advisory Board, 12 Oct 50.

[12] Harold M. Wright, *Salute to the Air Force Medical Branch on the 75th Anniversary, Royal Canadian Air Force* (Ottawa, 1999), 259.

[13] NA, RG 24, v 18,383, Cdn Sect Britcom Gen Hosp, Jul 52, Appx 4.

Once recruited and deemed healthy (even if not in fact), soldiers had to undergo training, including those who had come forward to serve in the medical services. No 25 Canadian Field Ambulance would be the workhorse for such care near the front, and to that purpose was organized into a headquarters responsible for setting up an advanced dressing station, and three casualty clearing posts further forward. The unit had a total strength of 232; each of the Field Ambulance's sections was self-contained, with an additional 10 jeep ambulances and 6 heavy ambulances at headquarters to allocate as necessary. Receiving verbal notice to mobilize in August 1950, it set forth its training policy by the 12th: veterans of the Second World War would undergo general military training (in effect, a refresher course), while others would follow ten weeks of indoctrination. Specialist training was expected to take until 1 November,[14] and medical training proper included learning the organization and role of an advanced dressing station, a casualty clearing post, an infantry division, divisional medical units, and the chain of evacuation. More specific were lectures on anatomy, physiology, the human skeleton, the circulatory system, hemorrhage control, types of wounds, and the use of triangular and roller bandages. The relentlessness of the war against illness was evident in lessons on military water supplies, insect-borne diseases, and more. By September, recruits had been divided into two classes: veterans chosen to work as medical assistants formed one course, while veterans and non-veterans alike could find themselves in a stretcher-bearer group on another course.[15]

In January 1951, the Field Ambulance moved to Fort Lewis along with the rest of the Canadian Brigade, to complete indoctrination before being deployed to Korea. It was not a fruitful period. The unit's war diary complains that

> Training since arrival has been practically non-existent. The main reasons for this anomalous situation being: (a) lack of vehicles (b) lack of canvas (c) heavy Camp commitments. A small fraction of the unit, a total of some sixty bodies plod on with repetitious basic training and basic Corps subjects... It was intended to have a series of 2-day exercises followed by exercises of from 6-10 days duration, with special emphasis on night operations, but due to above shortages it has been impossible to attempt even a one day exercise.

Running two medical inspection rooms (or MIRs) and providing an ambulance service to the rest of the brigade allowed little time for the unit's own indoctrination, though the situation brightened a little the following month: "At last some small progress can be seen in training.

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14. NA, RG 24, v 18,386, 25 Cdn Fd Amb, Aug 50.
15. NA, RG 24, v 18,386, 25 Cdn Fd Amb, Aug 50, Appx E; Sep 50, Appx 4.

This is mostly due to Major [E.H.] Anderson's efforts. There have been a number of compass marches, both by day and night, and one section exercise (Paregoric). The latter cannot be claimed as a success but it served to show the deplorable state to which we have sunk. It is hoped to have a similar exercise weekly." On 5 May the unit arrived in Pusan.[16]

Captain F.R. Cullen and Private R. Porto of 25 Canadian Field Ambulance dress Mortar Wounds of Private W.M. McLellan of 2 RCR, 30 May 1951. National Archives of Canada, PA 131810.

Once in the war zone, Canadian medical practitioners would learn or relearn what their ancestors had painfully experienced in centuries of warfare—the battlefield was a different place from the hospitals, medical inspection rooms, and even training areas back home. Otto Apel, an American doctor who served in Korea, noted years later, in a book co-authored with Pat Apel, that "Military medicine differs from civilian medicine in many ways. The civilian doctor spends most of his time and effort on clinical questions: how to diagnose and treat illness. The military doctor must diagnose and treat not only the customary diseases but also the diseases that are peculiar to the combat environment. In addition the military doctor must treat combat wounds, [and] a variety of problems rarely faced by the civilian doctor."

In fact, the battlefield was a somewhat irrational world, one where an enemy actively sought to disrupt one's efforts:

> In combat, doctors must be concerned with tactical matters, which are generally known as field operations. The doctors must be mobile in the combat environment, set up hospitals in primitive areas, build defensive perimeters, and contend with hostile forces. They must plan for the transport of all the supplies needed in a modern hospital and for the evacuation of the wounded from the combat hospitals to the field hospitals in the rear areas. And the military doctors must be responsive to the needs and the demands of the tactical command, for their role is not only the provision of medical care but also the larger mission of supporting the combat commander's effort to win on the battlefield.

Finally, military service made very different demands on medical personnel: "In military medicine, all doctors become surgeons, treating wounds constantly. Even for those who were surgeons in the civilian sector, the change from civilian to military medicine is challenging."[17]

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[16] NA, RG 24, v 18,386, 25 Cdn Fd Amb, Jan 51, Apps 4, Feb 51, Apps 5, 5 May 51.

Another lesson learned or relearned on the Korean battlefield was that medical practitioners worked with no little autonomy; armoured or infantry officers had enough to do planning or fighting battles without getting involved in the minutiae of medical treatment. Therefore, though the Apels might warn that "medicine, like every other endeavour of humanity, can be used by individuals or groups for greed and power and corruption,"[18] a practitioner's independence could still be used to benefit patients. After Eighth Army, the US formation conducting the war in Korea, issued an order to cease and desist the repair of damaged and wounded arteries, Otto Apel and his colleagues were called into the office of a Lieutenant Colonel Mothershead, the commanding officer of the MASH (Mobile Army Surgical Hospital) of which Apel was a member. As the surgeon later remembered,

> the Colonel shrugged and said that he trusted our judgment in the matter. We were the surgeons, and we had to make the judgment calls in the operating tent. He had much the same attitude we had, an attitude, right or wrong, that permeated all the MASH units and, if the truth were known, would have been shared by any commander in the field... We were the ones in the field; let us make the immediate decisions on procedures.[19]

One reason for such autonomy was the horrendous complexity of medical challenges; something as simple as food forces modern armies to incorporate specialists such as nutritionists within the ranks of their medical corps and provide them with the authority and resources to carry out their duties effectively. Dorothy Doyle, for instance, was posted to No 25 Field Dressing Station in the spring of 1953, and later remembered that "Everyone pitched in with ideas for improvements; from these we ended up with a fairly good kitchen and storeroom. Refrigeration was limited so great care in handling foods, etc, was necessary (perishables)." She described their strategies for coping with conditions: "A steam table was put together—very unique, using oil drums and M-37 burners to heat the water to heat the steam table holding food pots. Next, a portable one was put together; oil drum, a wheel, or I should say tire from a helicopter, a top to hold containers, water heated with an M-37 burner. Therapeutic diets were organized, a cook was assigned and a special refrigerator was acquired." She added: "The US Army was most generous with supplies to me; cleaning equipment, M-37 burners and even ice cream. The supply people were most helpful; they never were empty handed when they dropped in."[20] Professionals such as Doyle achieved some limited success in preventing disease; the Canadian Section at the British Commonwealth Hospital reported in June 1953 that "Parasitic infestations are not as prevalent as would be thought judging by the universal native incidence. This speaks well of the indoctrination of the troops and the practical sanitation and food management within the Service."[21]

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[17] Otto F. Apel and Pat Apel, *MASH: An Army Surgeon in Korea* (Lexington, 1998), 25-26.

[18] Otto F. Apel and Pat Apel, 214.

[19] Otto F. Apel and Pat Apel, 163.

The battle never ended, as the Apels wrote: "Many of the patients who came into the MASH were not wounded but had contracted some disease that made them unable to perform their duties. That is true in any war. The routine diseases of wartime, typhus, malaria, dysentery, frostbite, were rampant among the troops. Common diseases that can be easily treated stateside, like bronchitis, often erupt into serious diseases in the combat zone. A previously unknown and often fatal disease, haemorrhagic fever, a painful condition with headaches and backaches, nausea, and eventually seepage of blood through the skin, swept through the combat zone, and no one knew quite what to do about it. In any war—and Korea was no exception—illness is more prevalent than injury inflicted by the enemy,"[22] though the hemorrhagic fever he mentioned was perhaps more terrifying than most other ailments.

According to the 1950 report by Brigadier Hunter and Colonel Andrew, hemorrhagic fever was not well known, but had been "described to some extent by the Japanese in 1939." Characterized by such symptoms as acute fever, leaking capillaries, hemorrhage, and kidney damage, the report stated that

> Cases varied in severity from mild to those requiring treatment for shock... The cause of the disease has been difficult to determine but is now generally considered to be a virus with the vector a chigger mite associated with rodents. Preventive measures have been directed to the eradication of rodents and the impregnation of clothing with miticidal and repellant materials. The treatment is non-specific consisting chiefly of carefully controlled physiological support. Cases travelled poorly by road so helicopter evacuation was used when feasible and was felt to reduce hemorrhage and shock. It was found best to centralize such cases for the benefit of experience in evaluation and therapy. The mortality rate among United Nations troops was 5% to 7%.[23]

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20. E.A. Landells, *The Military Nurses of Canada: Recollections of Military Nurses* (White Rock BC, 1995), 514.
21. NA, RG 24, v.18,384, Cdn Sect Britcom Gen Hosp, Jun 53, Appx 3.
22. Otto F. Apel and Pat Apel, 122.
23. NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

Two years later the disease was still something of a mystery, the Canadian Section at the British Commonwealth Hospital reporting in June 1952 that it admitted three patients suffering from the fever that month, two British soldiers who had become ill while on leave and a Canadian who came down with symptoms while part of a reinforcement group: "These three cases serve to emphasize the fact that the incubation period may extend to thirty five days. It is quite conceivable therefore, that servicemen returning to Canada on rotation, may develop their initial symptoms on board ship or, in the case of those traveling by air, after their return to Canada."

Medical officers in Japan therefore had to be on the lookout for the disease, while physicians in Canada needed to be warned in case they should encounter it in returned service personnel. There was no agreement whether anyone who contracted the illness could ever be returned to full duty given possible kidney damage among survivors.[24] According to Barry E. Zimmerman and David J. Zimmerman, in *Killer Germs: Microbes and Diseases That Threaten Humanity*, the cause of the disease was not discovered until 1976, and named Hantaan, for a river in Korea, hence hantavirus. Its vector is a field mouse, and the disease can spread when the virus in its urine becomes airborne. A 1993 outbreak in the Midwestern US struck 40, of whom 25 died.[25]

Other diseases, such as malaria, were far more familiar, especially to those who had served in Sicily and southern Italy in the Second World War. The incidence in Korea was lower than it had been in the Mediterranean campaign, and paludrine proved reasonably effective as a suppressive drug. Still, "following the rotation of the Canadian Brigade in 1952, over 1000 cases of malaria were reported during the next several months in Canada," although treatment with primaquine or chloroquin seriously reduced the rate of recurrence; after the 1953 rotation the malaria infection rate was only a fifth what it had been a year before.[26] Milton Brown, a consultant in preventive medicine, wrote to the Director-General Medical Service in early 1952 about the use of paludrine; he noted that the drug was "very effective,"[27] but only if taken as directed. The Canadian Section at the British Commonwealth Hospital, for its part, reported in July 1952 that "Development of malaria among personnel arriving from Korea still constitutes somewhat of a problem and the reason still appears to be failure to adhere rigidly to the daily intake of Paludrine." No doubt officers and NCOs, whose every waking moment was focused on tactical matters and such logistical issues as food, were relegating anti-malarial procedures to a lower order of priority. One possible solution was "administering a three day course of Chloroquine in therapeutic doses, to all Canadian Personnel returning from Korea."[28]

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[24] NA, RG 24, v.18,383, Cdn Sect, Brit Com Hosp, Jun 52, Appx 4.

[25] Barry E. Zimmerman and David J. Zimmerman, *Killer Germs: Microbes and Diseases that Threaten Humanity* (Chicago, 1996), 142-145.

[26] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

[27] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, Milton Brown, Consultant in Preventive Medicine, to Brig W.L. Coke, DGMS, 26 Mar 52.

Even more familiar than malaria was venereal disease. An important difference from previous conflicts was the use of antibiotics, so that even if the incidence of VD was high, patients were treated on an ambulatory basis and were not lost to their units for long.[29] Still, it was a disease which Milton Brown noted was complicated by aspects "social, moral and religious, as well as medical," a Canadian Army Operational Research Team finding 2,402 patients in a 31-week period. Almost a quarter of these were cancroid, which was almost never seen in Canada, while syphilis, in contrast, occurred in only 3 per cent of victims, and another form, non-specific urethritis, was present in almost half of VD patients and was perhaps the most difficult to treat. Generally, however, he admitted: "venereal disease does not prevent a soldier remaining on strength of his unit and being able to discharge his military duties... Furthermore, the lapse of a three-month period for test of cure following an infection before being eligible for rotation to Canada is not only sound practice from a medical standpoint but should act as a deterrent against the contraction of the disease..." However, "There are some who would argue that this measure leads to concealment,"[30] a problem that had always accompanied attempts to use disciplinary measures to prevent the illness.

Public health advocates had long insisted that accurately documenting VD sufferers and tracing their sexual contacts was an important strategy in preventing spread of the disease, so

> The procedure of maintaining a master list of treated cases at Army Headquarters thus permitting adequate periodic blood tests to be carried out is of the highest importance. The names of all treated cases, among those serving in Korea, at the Reinforcement Group in Japan, and those given treatment while on leave should be placed on the master list. While in the service they may be adequately followed for blood serology and on discharge this role may be taken over by the civil authority.

Relying on such documentation, Milton Brown reported that "two-thirds of the cases of the disease is contracted in Japan. This means that the chief centres are in Tokyo where the five-day leave from Korea is

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28. NA, RG 24, v 18,383, Cdn Sect Britcom Gen Hosp, Jul 52, Appx 4.
29. NA, MG 31, J7, Sneath Papers, v 3, Papers Circulated to Members, No 87.
30. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, Milton Brown, Consultant in Preventive Medicine, to Brig W L. Coke, DGMS, 26 Mar 52.

spent and in and around Hiro and Kure for the personnel at the Reinforcement Depot." Prevention, aside from educational efforts (including films), was problematic, for though penicillin could be used as a prophylactic against gonorrhea, it could mask the symptoms of syphilis. He recommended a trial be carried out to determine effective chemical prevention measures.[31]

Less clinical, but just as revealing of the impact of venereal disease within the Canadian armed services, was a report from the Chief of the General Staff to the Defence Council, which followed Brown's observations by some two months. The Defence Council's chair described it as "disturbing," since "Apparently the present rate is roughly ten times as high as it was during the Second World War." He continued:

> the CGS [Chief of the General Staff] stated that appeals on moral grounds seem ineffectual and he believed the only way to diminish the incidence of VD is by initiating in Japan and Korea a vigorous health campaign. The United Nations included a health organization to which all member nations contributed some funds, directly or indirectly. Since the Korean campaign is a United Nations operation he thought the protection of the health of these troops ought to be the concern of the UN Health Organization and representations made to the UN to this effect through External Affairs.[32]

When asked if there was any punishment for contracting the disease, the CGS responded that "it is not a crime not to report for prophylactic treatment after exposure, but ... it is a crime to conceal venereal disease." Victims had to wait three months after being cured before they could return to Canada, and there was some concern that this rule encouraged concealment. However, the commander of the Canadian brigade in Korea at that time no doubt accepted the ninety-day rule to prevent spread of the disease among returned soldiers' families.

The issue was taken up within the Inter-Service Medical Committee in July 1952, and it decided "that although there is an increase in the venereal disease rate in Japan and Korea, no major threat is presented to the Canadian public by returning service men. This is due to a double screening of all personnel who return from that theatre." As far as disciplinary action was concerned, the ISMC suggested that

> Fear of penalty would tend to create concealment. It is much better to treat all venereal disease adequately than to drive some under ground. Hospital stoppages would effect only a very small proportion of the men who contract the disease because recently developed methods of treat-

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[31] Ibid.

[32] NA, RG 24, 83-84/167, Box 7718, 20-1-1 pt4, Extract from the Minutes of the 58th Meeting of Defence Council, 27 May 52.

> ment preclude the necessity of hospitalization except in highly resistant cases" where bacteria had evolved defences against antibiotics.[33]

The Personnel Members Committee agreed that no changes in regulations were required.

If the war against disease were not challenging enough, the war against North Korea and its Chinese ally added further medical complexity, especially given the need to get sick and wounded from the line where clashes took place to units and areas where they could be treated. As the Apels relate: "Evacuation of the wounded from the combat site to the hospital was always one of the foremost problems facing doctors in wartime,"[34] a state of affairs of which Canadian medical practitioners were far from ignorant. Perhaps the best example of the situation was offered by Ernest William Poole, a medical assistant posted to the 2nd Battalion, The Royal Canadian Regiment. When on 2 October 1951 the unit moved forward as part of a general attack,

> At 1745 hours No 6 Platoon came under very heavy and accurate Enemy small arms and mortar fire from the left flank and intense machine gun fire from the right flank. Within a few minutes, a dozen casualties had been suffered by the Platoon, some of them critical. Because of the steep slopes and thick underbrush it was not possible to determine precisely the nature and location of all the casualties, and there was a real danger that some of them would be lost to the Enemy where they fell.

Corporal Poole, however,

> was the NCO in charge of stretcher bearers with B Company during this operation... Corporal Poole proceeded forward through intense Enemy mortar and shell fire to render first aid and arrange for the evacuation of the wounded. He was warned that he could be killed but he insisted "I have a job to do and I am going to do it." He searched meticulously the whole area and did not stop until satisfied that all casualties had been accounted for. Enemy artillery and mortars were harassing the area, and Enemy snipers and machine gunners made any movement hazardous but nothing could deter him in his search for the wounded. Two of the casualties were again hit while he was tending them but he continued with unruffled calm to render aid.[35]

Poole's work obviously required more than purely medical knowledge as, while still under fire, he improvised stretchers from rifles and branches, securing his patients with thick vines:

> When the wounded had been prepared for evacuation, Corporal Poole led his party of bearers back some three thousand yards in the dark to the Regimental Aid Post. The route was subjected to continuous shell fire,

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[33] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, A.W. Wood, Sec ISMC, to Sec PMC, 16 Jul 52.

[34] Otto F. Apel and Pat Apel, 44.

[35] DHH 96/47, File 2, Poole, Ernest William.

> Enemy patrols had infiltrated along both sides, the area was heavily mined, and even the natural hazards were enough to deter any but the very brave. But Corporal Poole led his party with confidence and all the casualties were borne safely to the Regimental Aid Post...
>
> Throughout the day of 3 Oct, all that night and the next day, Corporal Poole continued his task of attending the needs of the wounded. Whenever first aid was required, he was present to administer it. He was utterly tireless in his work.[36]

Corporal Poole's battalion commander recommended him for the Victoria Cross, the highest award for valour in the Commonwealth, and the Canadian brigade commander agreed. The British General-Officer-Commanding 1st Commonwealth Division, however, with the approval of his compatriot the Commander-in-Chief British Commonwealth Forces Korea, awarded Poole the Distinguished Conduct Medal instead. Though second to the VC, it still makes Poole one of the highest-decorated medical practitioners of the post-war period.

Behind the front lines where Poole and his comrades carried out their hazardous work, challenges were posed as much by infrastructure as by enemy action. As Major B.D. Jaffey of 37 Canadian Field Ambulance reported in September 1952,

> The evacuation of sick and wounded in Korea has created many problems for the Medical Services... Korea is a very rugged and picturesque country interspersed by valleys which run between the many hills which make up the geographical terrain. The majority of roads in the forward areas are class III roads and the main supply routes are class II roads. There are not class I roads beyond the country's capital Seoul. In addition seasonal variations make the maintenance of roads a most difficult feat. During mid summer when the rainy season is present, many roads are washed away or become quagmires of mud necessitating the use of alternative routes.

Bridges were often washed out, including those over the Imjin, a major river, so that it was even thought a resort to aerial cable systems might be necessary to transport patients.[37]

By the time of Jaffey's report the Canadian experience in medical evacuation and treatment was extensive:

> The RCAMC has been responsible for the maintenance in the field of one Field Ambulance, one divisional Field Dressing Station, a Field Surgical and Transfusion Team, a Canadian Section at Brit[ish] Com[mon]we[a]l[th] General Hospital in Kure, Japan as well as maintaining the medical personnel required by the various arms and support units in the brigade. In

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36 Ibid.

37 NA, RG 24, v.18,385, 37 Cdn Fd Amb, Sep 52, Appx 3N, Maj B.D. Jaffey RCAMC, Casualty Evacuation in Korea.

> addition RCAMC personnel are attached to various American Mobile Army Surgical Hospital[s] (MASH) in a liaison capacity and also cover certain vacancies at the Corps Field Dressing Station.

The Assistant Director Medical Service, the senior medical officer within the division, was also Canadian.

As for the evacuation system that linked these facilities together, "battle casualties ... can be classified in two groups. The first are those caused by enemy small arms and mortars when our troops are on fighting, ambush, recce, jitter or standing patrols and these invariably occur beyond our FDLs. The second are those caused by enemy shelling and mortaring landing within our FDLs," or forward defensive lines. At the time of writing enemy aircraft had not yet been a factor.[38]

Of challenges, therefore, there were many: "Due to the poor road conditions and often times the forward routes being under enemy observation and within range of enemy mortars and shelling, the ambulance team must run the gauntlet of enemy fire during daylight hours or travel without lights after dark in order to reach company jeep head levels," the latter being the closest point to the enemy vehicles could travel. The ambulances returned "at low speeds (5 mph) depending on the severity of injuries sustained by the casualty." Under the rough conditions,

> the hilly terrain and the location of company headquarters platoons and outposts anywhere up to two miles beyond jeep head level necessitates the carry by stretcher of wounded that distance uphill and doundale [sic], through slit trenches and above ground until jeep head level is reached. Normally the greatest time loss encountered in casualty evacuation is found to be this needful long carriage of wounded back to where the ambulance is waiting. Once embarked, only a fraction of the time is required to return the wounded to RAP level.

Major Jaffey was able to provide a few examples, noting that "Recently in cases of fighting patrols of section strength or over, in order to minimize the time lapse until a casualty can receive expert medical attention, the Regimental Medical Officer and one Medical Assistant have established an advanced Regimental Aid Post at company Headquarters level," instead of battalion headquarters as was the norm. This, Jeffrey reported, gave the wounded "a maximum chance of recovery as antishock therapy can be administered at company level and can be continued along the route back... In serious cases during daylight hours, helicopter evacuations can be arranged from the RAP level back with minimum delay so that within 30-60 minutes of calling for a helicopter, the patient is normally

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38. NA, RG 24, v.18,385, 37 Cdn Fd Amb, Sep 52, Appx 3N, Maj B.D. Jaffey RCAMC, Casualty Evacuation in Korea.

Evacuation of a wounded soldier of 2 RCR, to the 8055 MASH, 22 June 1952. National Archives of Canada, PA 128851

in flight enroute to one of the MASHs."[39] The strategy drew on a mix of millennia-old methods with modern aviation technology.

The latter is worthy of some detailed discussion here, since the use of the helicopter to evacuate the victims of disease and modern war has become something of a legend in recent times. Conceptually, using rotary-winged aircraft for such work was not new; Squadron Leader W.C. Gibson wrote the Principal Medical Officer of Western Air Command in January 1945 with an attachment "containing pictures of the helicopter built by Stanley Hiller and which I saw in Berkeley California in November." In discussions with Hiller, "as to the future potentialities of helicopters in medical work in a mountainous country such as British Columbia, Gibson reported that the US Navy is now developing a large rescue helicopter of his design."[40] Whether the end of the Second World War dulled interest in such concepts, or whether the attention of the RCAF was simply focused elsewhere, the helicopter was not adopted at that time, higher headquarters advising in September that it "is interested in the possibility of using Helicopters for ambulance rescue work, but that no action is contemplated in this regard in the immediate future."[41]

Larger and better-funded US forces had greater resources to develop such technologies, so that by the time the 2nd Battalion of Princess

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[39] NA, RG 24, v.18,385, 37 Cdn Fd Amb, Sep 52, Appx 3N, Maj B.D. Jaffey RCAMC, Casualty Evacuation in Korea.

[40] RG 24, v.5393, HQS 60 1 46, S/L W.C. Gibson to PMO Western Air Command, 4 Jan 45.

[41] RG 24, v.5393, HQS 60 1 46, W/C W.R. Franks for CAS to Air Member CJS Washington, 17 Sep 45.

Patricia's Canadian Light Infantry fought a pitched battle near the Kap'yong River in April 1951, aircraft were available for more than airdropping supplies: "a number of seriously wounded Patricias were medevaced by two US Army helicopters," not only increasing chances of survival for the patients concerned but possibly increasing the fighting capacity of those who remained on the hill. According to Brent Watson, in a short but well-researched article, one aspect "buttressing the men's morale was the knowledge that if seriously wounded, they were only minutes away from advanced medical treatment. The medevac helicopter was still in its infancy at Kap'yong, but its positive impact on morale (not to mention the number of fatal casualties) was already apparent." In all, ten Patricias were killed in the action.[42]

A year later, 37 Field Ambulance noted that "Owing to terrain difficulties on Line Kansas," which it was supporting, and given that as a result infantry companies "will NOT be easily accessible," evacuating casualties was deemed to be difficult by road. Helicopter evacuation would be the best solution, and infantry battalions were called upon to "immediately institute recces [reconnaissance] to determine suitable helicopter strips and begin construction at sites selected." In general, if an infantry company had a road going through its position, helicopters would not be required; otherwise a "chopper pad" site was to be selected.[43]

By then the helicopter pilot had joined the knights of the air of the First World War and "The Few' of the Battle of Britain in aviation's pantheon of heroes; 25 Field Dressing Station wrote in August 1952 that "The evacuation of Canadian Casualties by Helicopter in Korea is an inspiring and life saving method which deserves considerable attention. There is no finer sight than that of a Helicopter coming up a Korean valley to evacuate a seriously wounded or injured soldier. It is a dramatic scene, and one that many of those in Korea will remember, especially those whose lives have been saved by this rapid, comfortable mode of transportation."

However, resources were limited: "Helicopter evacuation in Korea is reserved for those soldiers seriously wounded or injured and where the time factor is important. Such casualties are head wounds, penetrating chest wounds, penetrating abdominal wounds, fractured femurs, and burns, to list but a few general types. Helicopters fly at a very low altitude so that lack of oxygen is not a contraindication in cases with head or chest wounds and therefore all wounded can be evacuated by this method." Helicopter transport was not an automatic recourse:

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[42] Brent Watson, "Recipe for Victory: The Fight for Hill 677 during the Battle of the Kap'yong River, 24-25 April 1951," *Canadian Military History* (Spring, 2000), 20, 22.

[43] NA, RG 24, v.18,384, 37 Cdn Fd Amb, Jul 52, Appx 9.

> The decision for a Helicopter request is that of the Medical Officer at the RAP, at the CCP, or at the ADS. At Battalion level the tactical picture must be considered with respect to the RAP's position, the subsequent possibility of drawing enemy fire on that area and the safety of the Helicopter and crew from that fire. Therefore for tactical reasons the RMO's request for a Helicopter must go through the Battalion HQ. At CCP level the same factors as above enter into the picture. Thus rarely will a CCP make request for Helicopter evacuation and then only for an emergency case.

Usually casualty clearing posts sent casualties to an advanced dressing station, which, being two to seven miles behind the regimental aid post, was a safer site for landing a helicopter. it also allowed more elaborate medical treatment before the patient was airlifted: "Plasma, oxygen, and general supportive therapy which are life saving measures are easily administered and a solid worthwhile assessment of the patient's condition can be made. There the manner by which the evacuation is to be made is easily decided upon."[44]

No 25 Field Dressing Station offered the following example:

> imagine a RAP in a lateral valley. The Helicopter, in response to the evacuation request, comes up over the hills and as it nears the front line it is clearly visible to the enemy. As it reaches the valley in question the pilot will note the landing area and then fly well past it to a tactically empty area. Then, dropping down out of sight of the enemy it flys [sic] back along the floor of the valley to the landing area. In this way the pilot hopes that the area in which he dropped out of view will be shelled, and not the RAP area. Then the casualty is loaded and flown back, direct to one of the American Mobile Army Surgical Hospitals

of which more later. All such flights were conducted by US units, sorties usually flown in daytime and in clear weather. The Field Dressing Station also noted that helicopters were needed for other work, such as reconnaissance and rescuing downed pilots, so the role of helicopter transport was limited and it could only serve as an adjunct to motor ambulances. From 1 July 1951 to 29 February 1952, a period of eight months, only 31 Canadians were evacuated by this method.[45]

Less glamorous, but responsible for moving thousands of patients, was No 38 Canadian Motorized Ambulance Column (or MAC), a unit of the Royal Canadian Army Service Corps. Disembarking in Korea on 5 May, on the 9th it began teaching (or reteaching) its two dozen members how to use small arms. In the days that followed, it evacuated casualties, either to the 8076th or the 8055th MASH, and on the 24th the MAC started serving as the ground link between an advanced dressing station and the 8055th By the 31st 201 patients had been moved. The war was never far away; one brigade order required "that all jeeps would be sandbagged as protection against injuries by mines," while in August the unit "Dug in positions for perimeter defence of area. Every man briefed in his role in case of airborne attack. 38 MAC responsible for defence of Field Sick Bay also." In the following months incidents included an alarm when gunfire broke out (the cause was an inebriated Canadian soldier), a fatality within the unit when a member fell out of a vehicle, and a series of civilian demonstrations in June 1952. On the 5th, "there was a decided increase in the number of Koreans who entered into the 'Unification or Death' parades and minor demonstration," while two days later, "Demonstrations in the way of gathering in large crowds in the city of Seoul. Drivers were cautioned to stay away from central Seoul so as not to become involved in any trouble with the demonstrators who were gathered in central Seoul." As if to prove that the conflict was more than a war of words, there was an air-raid warning on the 8th.[46]

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[44] NA, RG 24, v.18,396, 25 Cdn FDS, Aug 52, Appx 9.

[45] NA, RG 24, v.18,396, 25 Cdn FDS, Aug 52, Appx 9.

Casualties were therefore moved by one of three means: on foot, in wheeled vehicles, or by helicopter. There was also a wide range of facilities where the sick and wounded could be treated, starting with first aid by stretcher-bearers or comrades, then in the regimental aid post within an infantry battalion, followed by the casualty clearing post and advanced dressing station of a field ambulance, then the field dressing station and mobile army surgical hospital. As we have seen, only the first nodes in the system were Canadian medical units, the MASHs and rear hospitals being US and British/Commonwealth facilities respectively. One of the workhorses provided by the Royal Canadian Army Medical Corps was the field ambulance, and we have seen how No 25 Canadian Field Ambulance was mobilized for service in the first year of the war. Later, No 37 Canadian Field Ambulance was formed to take its place, it having been decided that, unlike previous wars, soldiers would rotate through the Korean theatre rather than be sent overseas "for the duration." As one would expect in a conflict marked by periods of patrolling punctuated by the occasional attack, the unit's experiences varied from one month to the next. In June 1952, the Field Ambulance reported that "During the past month the unit has been quite active with a considerably higher proportion of battle casualties than usual, including a number of deaths,"[47] but the following month, it noted that

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[46] NA, RG 24, v.18,393, War Diary, 38 Cdn Mac RCASC.

[47] NA, RG 24, v.18,384, 37 Cdn Fd Amb, Jun 52, Appx 13.

Casualties of the Royal 22e Regiment leave the CCP and are loaded into an ambulance, 23 October 1951. National Archives of Canada, PA 183968.

> The Field Ambulance, less one section which is attached to the forward section of 25 Canadian FDS, is functioning as an ADS, Sick Bay and Urology Clinic. The ADS is handling sick parades from the Brigade units and nearby division units. The Sick Bay receives patients from 1 Com[mon[we[a]l[th] Div[ivision] Field Ambulances thus relieving the strain on the FDS. The Urology Clinic handles all clearances for personnel being rotated to Canada, those going on leave and course as well as all 25 C[ana]d[ia]n Inf[antry] B[riga]de and nearby division units VD cases.[48]

Later, battlefield casualties again dominated the unit's operations, the field ambulance reporting in September that "In the early part of the month casualty evacuations due to enemy Mortar fire and Shelling was relatively heavy particularly from the 1 R22eR [Royal 22e Régiment] positions. However towards the end of the month the enemy fire became less severe and casualties were consequently less in number." It was all to the best, the chain of evacuation having become somewhat complex due to enemy shelling, wounded being passed from the three companies of the Royal 22e Régiment through the battalion's Regimental Aid Post to a casualty clearing post of the 60th Indian Field Ambulance before arriving at the Advanced Dressing Station of No 37 Canadian Field Ambulance. A different type of casualty also showed up that same month, when "On 24 Sep 52 a patrol from 1 RCR captured one of the enemy due to poor co-operation on his part he was evacuated through the ADS suffering from mild concussions." Nor did September mark the end of the stream of battlefield wounded, and in October the unit's No 1 Casualty Clearing Post (of three) related that "This has

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[48] NA, RG 24, v.18,384, 37 Cdn Fd Amb, Jul 52, Appx 10.

Major Louis Lavallée, Royal Canadian Army Medical Corps, examines the results of a skin graft operation performed on Lee Dong Ki, in Korea, on 4 August 1953. National Archives of Canada, PA 140411

been a busy month for the CCP and has ended in three nights of non stop casualty evacuation," including two groups of wounded from The Royal Canadian Regiment, one from a patrol and the other from an enemy attack, as well as a group from Princess Patricia's Canadian Light Infantry when one of the battalion's patrols made contact with the enemy. Over 50 casualties, including 14 killed and 21 missing, resulted from a Chinese attack of 23 October.[49] It was a vicious little war.

December 1952 was different, at least for the field ambulance, as it served as an evacuating unit and a small sick bay after 13 December, the sick bay designed to house patients for no longer than seven days each. The brigade front was quiet, with 13 wounded evacuated through the unit's Casualty Clearing Post and 30 through its Advanced Dressing Station. The following month, only 24 battle casualties were evacuated.[50] The routine was not without its challenges, one problem developing in September 1952 with the use of blood products: "During those occasions when it was necessary to give plasma to seriously wounded patients, difficulty was encountered practically every time in getting all the plasma completely dissolved in homogeneous state. As a result small lumps of fatty material remained in the solution which eventually blocked the delivery tubing and stopped the transfusions. 5 different batches of plasma have been used with the same result. Latterly plasma strained through muslin has been used but this is a time consuming process."[51]

49. NA, RG 24, v.18,385, 37 Cdn Fd Amb, Sep 52, Appx 3; Oct 52, Appx 3J.
50. NA, RG 24, v.18,385, 37 Cdn Fd Amb, Dec 52, Appx 7; Jan 53, Appx 10.
51. NA, RG 24, v.18,385, 37 Cdn Fd Amb, Sep 52, Appx 3J.

In contrast to treating battlefield wounded, taking care of civilians offered challenges of its own:

> Koreans from the neighbouring villages attend for medical assistance. An afternoon clinic has accordingly been organized and is held in the ADS department. Lack of interpreters has interfered with the progress of the clinic. The recent acquisition of another interpreter during the afternoons is clearing it satisfactorily at the present time. Three hundred civilians have attended up to date. The majority of them are women and children. Respiratory and dermatological lesions are most commonly encountered. Pulmonary tuberculosis presents a problem due to the complete lack of facilities for hospital or sanatorium care for this type of patient in Korea.

The next Field Ambulance to see service in that far-off war was No 38, whose formation was authorized in May 1952. Personnel were gathered at Camp Borden:

> The unit has been brought up to strength by having its Officers and Men posted in from across Canada, from various medical installations, hospitals, personnel depots, command and area detachments, of course the greatest source on the private soldier level was from the RCAMC School, Camp Borden, Ontario.

There was, thankfully, a healthy leavening of experience, as "Several of the Officers have already served tours of duty with 25 Cdn Inf Bde Gp or 27 Cdn Inf Bde Gp," 25 and 27 Canadian Infantry Brigade Groups. "Their knowledge has proven of tremendous value in the preparation of this unit for service in the Far East. This was most evident when the unit was out on Field Exercises during January and February 1953."[52] The unit's strength had stood at 148 in December 1952. By February it was up to 209 and the following month could report having conducted a training exercise called Medical Broad Front II, where its troops practised the role of a field ambulance, the rapid collection of sick and wounded, delivery of first aid, the preparation and classification of casualties, and how to complete the necessary documentation. Like its predecessors, the unit was organized into a headquarters and three casualty clearing posts: "Medical equipment at the CCPs is sufficient for all first aid procedures and for some resuscitation," the latter referring to the use of blood and plasma to treat shock. The unit's Advanced Dressing Station had "equipment sufficient to carry out emergency surgery and all resuscitation measures."[53] All would be put to use.

On 3 May 1953, "Due to the attacks by the Chinese on the RCRs, this ADS although in reserve was involved by sending up ambulances and medical assistants." On the 20th, the unit reported that "Eight casualties resulting from the bombing and st[r]affing of allied forces by four planes with USAF markings identified as F-84 Thunder Jets were treated at this Fd Amb [Field Ambulance]. Two cases were evacuated by helicopter (one American and one Korean) two Koreans transferred to 25 FDS and four Koreans treated and discharged to duty." Then, on 9 June, "Early this morning an urgent call for help from Capt H. Gaist RMO 2 RAR [Royal Australian Regiment] in the line brought Capt J.J. Glynn with extra supplies of plasma and giving sets to the Australian RAP. In fifteen minutes four badly wounded men were given intravenous plasma by Capt J.J. Glynn while Capt H. Gaist went out into the company positions to attend to the casualties there. At first light four casualties having been resuscitated sufficiently were evacuated by helicopter and on enquiries throughout the week are believed to be all doing well." On 1 July came a change of pace as the field ambulance began operating a sick bay of 125 beds, "holding the minor sick and wounded of 1 Comwel Div [Commonwealth Division] and operating a Medical Inspection Room and VD Clinic for routine sick parades of units in the vicinity."

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[52] NA, RG 24, v.18,393, 38 Fd Amb, Mar 53, Appx 6.

[53] NA, RG 24, v.18,393, 38 Fd Amb, Dec 52, Appx 3; Feb 53, Appx 4; Mar 53, Appx 5.

An incident on 10 July 1953 provides an excellent example of the resources a field ambulance could call upon to carry out its tasks. That same month a cease-fire ended fighting in Korea. According to the unit's war diary,

> The Corporal Medical Assistant on duty received a call from a Royal Engineer unit nearby stating that one of their men was very near death and for us to despatch an ambulance, medical assistant and to have a medical officer and a padre standing by. Before our ambulance could reach the gate a call was received stating that they could not wait for the ambulance but were sending the patient directly here. The medical officer on duty, not knowing the religion of the patient, summoned both the Roman Catholic and Protestant Padres. As an added precaution another medical officer was despatched to the ADS in case his services proved necessary. The dental officer reported as well in case he could be of any assistance. All the medical assistants were alerted [and] examining trays, splints, etc, made ready for instant use. The Dispenser was routed out of bed to provide plasma and to make available any extra drugs or equipment which might be found necessary.
>
> The guard at the gate was alerted to direct the vehicle directly to the ADS.
>
> The clerks were standing by with the necessary papers for documentation. Altogether there were about 25 or 30 people involved in preparation for the reception of the patient.
>
> A $2^1/_2$ ton vehicle came roaring through the gate followed by a jeep containing Lt-Col [J.D.] Galloway [the field ambulance's commanding

> officer] and Capt [G.A.] Vanner. On being informed at the gate of the emergency, the CO immediately proceeded to the ADS.
>
> When the vehicle pulled up at the ADS a medical officer and two medical assistants rushed out, placed the patient on a stretcher and hurried him into the examining room.
>
> It did not take much of an examination to determine that the patient was pretty well out but from intoxicating beverages, and any pain he was in was caused by a distended bladder.
>
> A short walk up and down took care of the bladder trouble and a couple of cups of coffee soon brought him to life again and in a matter of minutes he was returned to his unit, the emergency ended.[54]

Whether the unit received any congratulations for its prompt service is unknown.

Behind the field ambulance in the chain of evacuation was the field dressing station, No 25 having its role explained in August 1951: "As a Divisional FDS your basic task will be that of holding minor sick and injuries from the Division and thereby obviating a large proportion of such cases from being evacuated out of Korea." To do so it would set up a facility with 200 beds, and "During the present operational situation of the Division you will adopt a holding policy of up to 14 days, subject to the overriding factor that a case so held must be likely to be fit for RTU to full duty within that period," RTU being militarese for "Returned to Unit." A surgeon and anaesthesiologist would take care of surgery, while a psychiatrist would treat those whose injuries were of the mind and spirit. In September the unit admitted a total of 710 sick and injured soldiers, carried out 32 minor operations in its Medical Inspection Room (8 of them circumcisions), and treated 97 psychiatric patients. The following month was similar, beginning with a request from the American 121 Evacuation Hospital to take patients proving too numerous for its capacity; 17 stretcher-borne soldiers and 15 walking wounded came through 25 FDS' doors that way.[55]

That month admissions increased over what had been a busy September, "largely due to the number of casualties sustained in operations during the early part of the month. The only other hospital unit in Seoul area—121 US Evac Hosp became full and Comwel Div patients who had been treated at the Norwegian MASH and evacuated by US Ambulance Train were transferred to us. These patients had had their primary surgery done and were admitted to this unit as transfers from Normash [the Norwegian MASH] and evacuated as necessary to ... Gen Hosp, Kure. We were informed that 8 out of 10 of all Comwel Div casualties

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[54] NA, RG 24, v.18,393, 38 Fd Amb, 10 Jul 53.

[55] NA, RG 24, v.18,395, 25 Cdn FDS, Aug 51, Appx V; Sep 51, Appx 6; 4 Oct

Lieutenant (Nursing Sister) Marjorie Horsnell of 25 Canadian Field Dressing Station changes the dressing of Lance-Corporal Claude MacDonald, of 3 PPCLI, who is recovering from leg lacerations suffered in a jeep accident, April 1953. National Archives of Canada, PA 173470.

were evacuated through this unit." The number of patients arriving at the dressing station continued to rise, and in November "It is noted that there is a noticeable increase in psychiatric cases... There has been a slight increase in the percentage of burn cases and it is anticipated this will increase, with the increased use of both oil, gasoline, and improvised heating appliances." That month the unit first mentioned patients suffering from haemorrhagic fever, though psychiatric injuries formed the largest group. December saw a decline in admissions generally, though respiratory diseases were more common due to the cold weather: "There is a marked decrease in psychiatric cases, certainly due to the decrease in operational activity," the unit reported laconically.[56]

In the months that followed, 25 Field Dressing Station treated patients with injuries and diseases ranging from skin ailments to glandular problems to "post traumatic syndrome' (one of the first times the expression was used) to haemorrhagic fever, the latter patients being evacuated by helicopter to the 8228th MASH, which specialized in their treatment. In the summer of 1952 therapeutic circumcision and ingrown toenails were common, but by September the unit was handling so many surgical patients that "the need for better nursing care has arisen. The desirability of obtaining Nursing Sisters for this purpose has been discussed," since they specialized in post-operative treatment. Indeed, the following month "an emergency operation on a perforated Duodenal ulcer patient, necessitated the temporary attachment of two Nursing Sisters for the post

[56] NA, RG 24, v.18,395, 25 Cdn FDS, Oct 51, Appx 5; Nov 51, Appx 5; Dec 51, Appx 5.

operative care," the required personnel performing the necessary work for three days. As the FDS repeated in October, "It has since been suggested that Nursing Sisters could perform a very useful function at 25 Cdn FDS in view of the amount of Surgery now done by the FST," or Field Surgical Team. That month over a fifth of incoming patients were victims of gunshot wounds; the following month they represented almost a third of the soldiers being brought into the dressing station.[57]

As negotiations for a cease-fire dragged on into 1953, battle exhaustion became the more important topic of discussion in the field dressing station's war diary. In May 1953 it reported that

> There has been an increase in the number of [psychiatric] cases this month (70 compared with 53 last month). The recent heavy fighting in the sector is without doubt responsible in part for this increase in patients, but it has been noted that referrals from positions of relative safety such as base and rear divisional areas, have increased proportionally with those from front line fighting positions. Fighting, although heavy, has been mostly sporadic and instances of units being engaged with the enemy or under shelling or mortar fire for prolonged periods of time are relatively rare and in consequence only 2 cases of battle exhaustion are reported. Most of the other cases from the battle area were found to be acute reactions to battle stress,

their psychological injuries caused by mental shock rather than fatigue. The following month the unit reported that continuing heavy fighting accounted for the 23 soldiers being admitted for battle exhaustion. By July it had treated 72 such victims: "Correlating the increased front line psychiatric casualties with the decreasing activity we can assume that tension in the minds of the men must have been higher and the fear of being killed just at the last moment" greater.[58] The fighting ended that month.

Treating battle exhaustion was a multi-layered effort: "During the period of active hostilities in Korea," wrote Hunter and Andrew, "the Divisional Psychiatrist for the 1st Commonwealth Division was being supplied by the RCAMC. This officer was stationed at the Field Dressing Station where he maintained a small ward for observation cases and short term treatment. The general policy of treatment as close to the front as possible was being maintained in order to minimize the factor of gain through illness," where the patient's condition worsens because evacuation confirms he is ill. As for routine,

> The Psychiatrist visited regularly the Field Ambulance where the patients were sent. Those with slight or no disability were returned directly to duty. Cases of more severe disability were treated at the Field Dressing

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[57] NA, RG 24, v.18,395, 25 Cdn FDS, War Diary.

[58] NA, RG 24, v.18,395, 25 Cdn FDS, May 53, Appx 5; Jun 53, Appx 5, Jul 53, Appx 5

The post-operations ward of the 43rd MASH, March 1953. National Archives of Canada, PA 128834

> Station for short term psychotherapy and sedation with the majority either being returned to their units or employed in rear areas in Korea... Psychoneurosis occurred at the rate of two per thousand per annum; this is the rate to be expected in any comparable group of people.

Interestingly, records reported, "Battle exhaustion did not occur to any great extent due, it is felt, to the nature of the fighting in which battles were of short duration and the fatigue factor was not operative. Psychiatric consultation was frequently requested in the case of soldiers accused of breaches of discipline. These cases were examined and if no medical disability was present, were returned to their units for administrative disposal,"[59] that is to say, punishment in accordance with service regulations.

In the same way that Canadians treated allied patients suffering from battle exhaustion, so they relied on allies for some surgeries. According to Hunter and Andrew, "As there was only one Canadian Field Surgical Team in Korea, and in the early days it was based on an American Mobile Surgical Hospital (MASH), part of the initial or forward surgery was performed by American and to some extent by Norwegian surgeons. As soon as it was possible such of our casualties were returned to Canadian channels."[60] Since soon after the Canadians arrived the fighting settled into spasmodic engagements and patrols, according to historian G.W.L. Nicholson "In general, cases were sufficiently well spaced in time to allow the fullest possible care to be given to each." Medical assistants and orderlies could thus usually apply the fundamentals of first aid and resuscitation, as well as provide a sponge bath to remove dried mud and

59. NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

60. NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

blood, and even supply a clean suit of pyjamas. Nicholson quotes one MASH commander, who at a conference with his colleagues stated openly that "When Canadian casualties reach my hospital, they are ready for the operating room."[61] In return, those same casualties seem to have received all the treatment the MASH was able to provide.[62]

After a brief stay at the MASH, the patient underwent further hospitalization and surgery, if required, at the British Commonwealth Hospital in Kure, Japan.[63] As for the MASH with which Canadian surgeons were affiliated in the early days, it was a substantial organization, with 14 doctors (3 surgeons, 2 anaesthesiologists, a radiologist, 3 assistant surgeons, 2 internists, and 3 general duty medical officers), 12 nurses, 2 medical service corps officers, a warrant officer, and 98 enlisted personnel.[64] To examine the Canadians' work, January 1952 can be taken as fairly typical, since "Surgery was moderately busy' at that time. The number of wounded was "not large but wounds were frequently serious," 30 of them requiring abdominal surgery. Generally, the Canadians were "working well with the MASH not as a separate unit but in [an] integrated fashion. Capt T. McLennan kept busy and worked on day shift, rotation plan with other anaesthetist. Major Lippert worked same way with other surgeons."[65]

It was not enough, and in June the Canadian Section at the British Commonwealth Hospital in Kure reported that

> The fact that no CCS or Hospital is stationed in Korea has led to an increasing number of evacuations from the field to this unit. Since, by such evacuation, personnel are lost to the operational units for a minimum of three weeks, and often for as long as two months, it is felt that a serious consideration should be given to making use of American medical and surgical installations and specialist[s] to a greater extent than is the practice at present.

Among the examples cited of patients that could be treated in Korea were those suffering from dyspepsia (severe indigestion), peptic ulcer, low back pain, possible intervertebral disk (i.e., problems between vertebrae), and congenital phimosis (tightness of the foreskin) requiring circumcision. Evacuating these patients was a source of inefficiency:

> The manpower wastage in the past year, due to evacuation of such patients has been enormous and it is felt by all components of this hospital, that steps must be taken to eliminate it. The psychological factors, too, are most important, and this is reflected in the gradual increase in such

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61. G.W.L. Nicholson, 261.
62. G.W.L. Nicholson, 265.
63. NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.
64. Otto F. Apel and Pat Apel, 48.
65. NA, RG 24, v.18,398, No 25 Cdn Field Surgical Team, Jan 52.

> admissions during the past few months. It is recommended, therefore, that the investigation of all such cases be completed in Korea, at least to the point where there is definite proof that the individuals can serve no longer in any capacity in the field, or that prolonged treatment is required.

Specifically, it was estimated that "Out of some 160 war wounds admitted during the past fortnight, fully 30% were of an extremely minor nature, requiring merely delayed primary closure and a few days convalescence. In the absence of a Commonwealth CCS or hospital on the spot, it is felt that consideration might be given to employing the Field Surgical Team for such cases, since evacuation, here again, means loss of a trained soldier, to the unit concerned, for several weeks."[66]

Not that Canadian medical practitioners on the Korean peninsula were under worked—quite the contrary. For example, in July 1952, "The Canadian Field Surgical Team continued to be employed at 8055 MASH. Work during the month had been quite heavy, mostly due to American casualties due to considerable activity in their sector." In August came an important change, no doubt resulting from the Canadian Section's report cited above, as on 3 August the unit ceased to work with the Americans and became attached to No 25 Field Dressing Station, the Assistant Director Medical Services having concluded that

> by forming a Cdn surgical centre at this location, ... some wound closures of a less serious nature could be done here rather than evacuate the men to Japan. Also it is proposed to do some of the other elective procedures here such as appendectomies and haemorrhoidectomies. The surgeon is also to handle surgical consultations. By this means it is anticipated that a large number of evacuations to Japan, from the entire Commonwealth Division will be avoided. After an appropriate convalescent period at the FDS and Divisional Rest Centre the soldier will then be returned to his unit.

By the 25th the new system was up and running, and "Arrangements was [sic] made with the Field Ambulances as what types of cases would be handled. Also the American 8055 MASH and the Norwegian MASH was informed as to what reparative surgical procedures could be done by the FST rather than evacuating the Casualties to Japan."[67]

One result was the need to increase the Field Surgical Team's bed capacity, so that by the end of September it had gone from about 20 to 50 or 60; then, the following month, "The volume of work continued to be quite heavy... As X-ray facilities were still not available at this unit any casualties sent here were generally first sent to either the American MASH or Norwegian MASH where X-rays were taken and

66. NA, RG 24, v 18,383, Cdn Sect, Brit Com Hosp, Jun 52, Appx 4.
67. NA, RG 24, v 18,398, No 25 Cdn Field Surgical Team, 7 Jul 52; Aug 52.

debridement carried out. At times some of these casualties were evacuated to the FST for their initial surgery. However as intended the prime function of this unit continued to be elective surgery and delayed primary suturing to avoid evacuation to Japan. By this means it was possible to return the soldier to his unit much sooner." Still, the team's limitations were evident, and it was noted in April 1953 that "one surgical team cannot work a 24 hour shift," so that procedures like debridement, where injured tissue was cut away to avoid infection, needed to be executed elsewhere, since it "should be done as soon as possible after injury... "[68]

Discussions—and outright arguments—concerning the need to treat as many patients as possible without evacuating them off the Korean peninsula led to the creation of a facility in Seoul. It was, however, something of a hybrid, a mix of forward dressing station and field hospital, and as such was never blessed with any kind of permanent establishment. In October 1952, Brigadier J.W. Bishop of the Adjutant-General's branch visited "all medical installations to which RCAMC personnel are posted or attached," and the organization at Seoul proved to be the least impressive. As he explained, the unit's formation came at the insistence of a Colonel Menecees of the British Commonwealth Hospital, in spite of the opposition of other high-ranking members of the staff: "as the result of Colonel Menecees' continuous pressure the building formerly occupied by 23 FDS in Seoul has now been converted to a 200 bed medical installation of somewhat doubtful status. I gather that this ad hoc unit will be established as either a 200 bed general hospital, a CCS or a corps FDS before long but at the moment I understand that it has no fixed establishment. It does, however, hold casual sick, etc, who do not require evacuation to Kure and is thus shortening the time out of the line." After his visit, however, he reported,

> I must confess that I was somewhat disappointed in the facilities and made a particular note of the absence of hospital beds and sheets. The following day while visiting 23 FDS I encountered Major-General Kingsley-Norris and Brig[adier] O'Mara at which time I raised the question of improving the standard of the patients in Seoul. Brig O'Mara made it quite clear that he considered it undesirable to provide hospital beds and sheets as he felt that the unit is in a vulnerable position and should not be hampered with hospital equipment which might be difficult to move. I made it quite clear to him that I did not consider the loss of a few hospital beds as particularly significant in the case of severe military reverse. He, however, made it clear that no action will likely be taken until the status of the unit became final.[69]

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68. NA, RG 24, v.18,398, No 25 Cdn Field Surgical Team, Sep 52; Oct 52; Apr 53, Appx 1.
69. NA, RG 24, v.18,224, War Diary, Oct 52, Appx A-11, Brig J.W. Bishop, VAG, to DGMS, 29 Oct 52.

Bishop, however, was not about to let matters lie, and

> I later raised the question of the beds and sheets, etc, with Col[olonel] Morgan-Smith and Gen[eral] West at Div HQ and found that they agreed with my views completely. Gen West stated that he intended to visit the hospital during the next few days prior to the arrival of Gen Bridgefort from Kure and that he would press for better conditions for the patients. I saw Gen Bridgefort a few days later in Tokyo before his visit to Seoul and mentioned the question to him and was assured that he would see that the men were given all the comforts that would be normally found in a general hospital.

While still in Tokyo, Bishop ran into the unit's commanding officer, and advised him that

> the medical installations in those same buildings had been the subject of severe CGS [Chief of the General Staff] criticism some months ago and that I was quite sure that it would be to his disadvantage to be in command of a unit which offered less than the best conditions which would be provided. By the end of our conversation I think that he was convinced that it would be desirable to take advantage of any assistance that could be given to him to improve the standards.

Bishop insisted in his report that the CO in question "is obviously doing a first class job under adverse conditions and is quite rightly showing the right spirit and loyalty to his DDMS," the Deputy Director Medical Service. "His unit however, is one which I would not care to be in for a matter of several weeks as it is dull and gloomy and suffers by comparison even with 23 FDS which is under canvas."[70]

Obviously, there was some improvement in the months that followed, Major-General W.H.S. Macklin, the Adjutant-General, reporting in July 1953 that "my opinion is that the staffs of these places," including 25 FDS and the hospital at Kure, "are efficient and that in respect of actual medical equipment they are thoroughly well supplied." In fact, he was replying to a rather unfavourable inspection report by Brigadier J.V. Allard, commanding 25th Canadian Infantry Brigade, who noted the lack of surgical beds "that crank up and down" and "nice bright blankets," to use Macklin's rather sarcastic turn of phrase. Beds, however, were available, though even in the institution's defence the Adjutant-General was unclear about its role, using the expression "the British hospital or CCS or whatever they call it, in Seoul."[71] To the very end of the fighting in Korea, it therefore continued to operate in some form of perpetual ad hoc existence.

[70] NA, RG 24, v.18,224, War Diary, Oct 52, Apps A-11, Brig J.W. Bishop, VAG, to DGMS, 29 Oct 52.

[71] NA, RG 24, v.18,224, War Diary, Jul 53, Apps A-2, MGen W.H.S. Macklin, AG, to DGMS, 8 Jul 53.

Regardless of what units might be created on the peninsula, and regardless of their capabilities, it was inevitable that some casualties at least would continue to be evacuated to the British Commonwealth Hospital in Japan. As of 29 May 1951, a Canadian Section had been officially designated to function as part of that institution, its role "to reinforce the British Commonwealth Hospital located there," that is to say, in Kure, "with the necessary Canadian medical and nursing personnel in order to provide for Canadian casualties from the 25th Canadian Infantry Brigade Group." To that end, its establishment was made up of eleven officers, three sergeants, and seventeen other ranks.[72] If January 1952 can be taken as a fairly typical month, then the Canadian Section handled a variety of patients, suffering from fourteen different ailments, from rheumatic fever to bronchial complications to peptic ulcer. Tragedy was an unfortunate part of life, however, and "During the month one Canadian patient died in hospital... Pte Ducharme, G (PPCLI) died at 1340 hrs, 12 Jan 52, from Anaphylactic Shock resulting from injection of Penicillin," evidence that the wonders of modern science could come at a high price.[73]

Among the staff at Kure were Canadian nursing sisters, whom we have seen working at other nodes in the chain of evacuation; but because they also operated outside that chain, their story is best told as a comprehensive whole. According to Elizabeth Pense Neil, who was simply Elizabeth Pense during the war, "In September of 1952 the first commonwealth nurses arrived in Korea; two Canadians, two Australians and two British nursing sisters. Canadian Captain Elizabeth Pense was now matron of the newly formed British Commonwealth Communications Zone Medical Unit. She was responsible for establishing nursing services in an old school building."

In a letter home in September 1952, she described the unit as "a 100-bed hospital, though we have 112 patients at the moment. The outside of the buildings looks quite respectable, but inside it is not too good. Plaster falls from the ceilings, and they tell me that when it rains I will need an umbrella in my office." In regards to living conditions,

> Our quarters have possibilities, but at present are very bare. We have a bed each, some nails on which to hang our clothes, a bucket latrine, a narrow table for the wash basins, some pails for the Korean house girls to bring up water. That is about all at present, but they are trying to get us some furniture. We are hoping to get some curtains soon. As we have no blinds, we have to undress in the dark.

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[72] NA, RG 24, v 18,383, Cdn Sect, Brit Com Hospital, Jul 51, Appx 1; Appx 2

[73] NA, RG 24, v 18,383, Cdn Sect, Brit Com Hosp, Appx 7

The situation could thus be best described as primitive, and "For the first few days we had to rely on sponge baths—usually cold—but now they have arranged for us to have the use of showers for half an hour each day. The showers are good, but built for tall men. One of our sisters, an Australian, has to have hers standing on a chair, in order to reach the taps."

One should not, however, exaggerate the level of discomfort. Though "Looking back over this, it seems that I have nothing good to say about the place. Actually, it is much better than I had been led to expect, and I am thrilled to be here. In Japan I had no real job to do, and was pretty bored. Here I have a very interesting one with congenial people, and a chance to put some of my ideas into place. We have a very good group of medical officers, and they have been extremely co-operative,"[74] which was all to the good, or the result would have been disaster.

Perhaps one reason medical officers were so co-operative was that nursing sisters were trained in areas that surgeons were only slightly familiar with—notably post-operative monitoring and care. In fact, military doctors since 1944 had been arguing that very fact, and demanding that proper specialists, i.e., nursing sisters, be available for work closer to the front lines to properly check on patients' progress, especially after such serious surgery as that required to treat wounds to the abdomen. As No 25 Canadian Field Surgical Team reported in October 1952, two such professionals had indeed been on staff for a few days at the beginning of the month: "The nursing sisters greatly facilitated the post operative care of these patients and it is felt that if four or five could be attached hear [sic] for such purposes as well as operating room and ward supervisor it would help to provide better post operative care."[75] As we have seen in discussing the operations of the field dressing station, however, higher authority deemed their services near the front to be only temporary.

Then, in early 1953, "as a result of further investigations by a senior Canadian medical officer," policy-makers decided to increase the Canadian contribution to the medical services of the Commonwealth fighting in Korea: "By this time a Canadian Field Dressing Station had become, in effect, a small field general hospital operating in the area of the Commonwealth Division. Considerable surgical attention was being given to casualties within 15 miles of the battle line. Provision of this attention resulted in the early recovery of the wounded and sick and their consequent return to duty with their units without the delay which would

[74] E.A. Landells, 517-519.

[75] NA, RG 24, v.18,398, No 25 Cdn Field Surgical Team, Oct 52.

be consequent upon the evacuation of such casualties a distance of 500 miles to Japan. In order to make this small hospital work at the highest level of efficiency it was considered that nursing sisters should be provided for the post-operative care of casualties." As a result, an additional detachment of Royal Canadian Army Medical Corps Nursing Sisters was despatched to Korea for duty at the Field Dressing Station.[76] By then, the war had been raging, in its grinding tit-for-tat kind of way, for almost three years.

There were thus some links in the chain of evacuation where nursing sisters were deemed to be essential. Further, as G.W.L. Nicholson relates in a semi-official history,

> The summer of 1951 saw the first large-scale hospital airlift in Canada. Canadian casualties from Korea, who had been flown in United States aircraft across the Pacific to Tacoma, Washington, were transported in a converted Dakota air ambulance of No 435 Squadron RCAF to Edmonton and other DVA centres. The plane was equipped to provide most normal hospital facilities, as well as special oxygen systems, litters, and litter holders. Besides the regular crew it carried a flight nurse and a flight medical assistant.[77]

One who went through the process of qualifying for such work was Mary Joan Fitzgerald, later a colonel, who in 1950, as a flying officer, "was sent as a candidate to the United States Air Force Flight Nursing Course at Montgomery Air Force Base in Alabama. First, there was classroom and practical training at Montgomery, and then actual air evacuation flights on the Tokyo, Japan to Los Angeles, California route. But first, F/O Fitzgerald had to get from Montgomery to Hawaii and this was accomplished on the first available trans-Pacific aeroplane available—a Boeing B-29 Superfortress bomber. Accompanied by a USAF nursing officer on her way home on furlough, Joan sat in a cramped area at the rear of the aircraft, seldom seeing the outside world except when the plane stopped for refuelling before heading across the Pacific."[78]

Flights originated in Tokyo,

> where the aeromedevac team picked up a plane load of casualties from the Korean conflict. The aircraft in use at that time was the Douglas C-54 Skymaster, a four-engine passenger-cargo plane that could take twenty-eight patients, and the Douglas C-57 Liftmaster, a larger four-engine troop-cargo carrier that could accommodate as many as sixty-nine patients. Patients were accommodated on canvas stretchers stacked along the side walls of the fuselage and five high along the centre of the cargo bay. The centre stacks were two deep, requiring nursing staff on both

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[76] NA, MG 31, J7, Sneath Papers, v.3, Papers Circulated to Members, No 87.

[77] G.W.L. Nicholson, *Canada's Nursing Sisters* (Toronto, 1975), 214.

[78] Harold M. Wright, 206.

> sides. The stretchers were held separated on stanchions and litter straps with less than twenty-four inches of space between litters. Regardless of their degree of mobility, all casualties had to be on litters because of the duration of the flight and the limited walking space around the plane's interior. Neither of these aircraft was pressurized, that is to say, it had to fly below 10,000 or, if a higher altitude was necessary, crew members had to provide oxygen from portable bottles to the patients. There was limited seating, even for the aeromedevac crew, but there was little time to sit with the constant need to check and care for patients, especially if they were in need of oxygen.[79]

Flights from Tokyo to Hickam Air Force Base in Hawaii were never direct, however:

> Limited range and weather conditions made stops necessary to refuel, restock the dietary and medical supplies and to give the crews and patients a respite from the gruelling flight. Stops were made at various islands, including Kwajalein Atoll in the Marshall Islands, Wake Island and Midway before reaching Hawaii. On arrival, patients were deplaned and rested in hospital before embarking on the next leg of their journey to Los Angeles, where other crews would take them, most by air, to hospitals in the US and Canada. As a result of F/O Fitzgerald's aeromedevac experiences and recommendations, more nurses were trained and Medical Assistants were added to the training program.

It was thus only a beginning.

Isabel Ziegler could attest to the complexity of the task. She joined the RCAF in 1950 and was chosen that same year for six weeks of Aeromedical Evacuation training at Gunter Air Force Base in Alabama, followed by three months of on-the-job training with the 1453rd Medical Air Evacuation Squadron at Hickam Air Force Base in Hawaii. According to her description,

> We loaded up in Tokyo with patients from the Korean conflict. It was hard on these people when we had to off-load them for aircraft refuelling. They were put in an ambulance and taken away from the centre then shuttled back to the aircraft. If they were able to return to the war zone within three months, they stayed at Hickam... Canadian patients returned to Canada via RCAF transport.

Medical personnel for the latter included a nurse and medical assistant; there was no physician on board. He probably would have been little more than extra weight, a serious concern, as "we were weighed in complete with our medical kit which was a suitcase complete with urinals, bedpans, medication, and, if you were smart, an alarm clock, because all medications had to be given on zebra time," or Greenwich Mean Time (now known as Zulu). There was also, of course, the need for proper documentation, and "A complete record was maintained of the time each patient spent in the air as well as each off-loading and on-loading. When they arrived at USA Tripler Army Hospital in Hawaii, each patient had a slip of paper listing the miles he had flown, and the time of his medication in zebra time." Other challenges included bureaucracy, which could not reconcile the number of days in a travel claim to the need to cross the international date line, and local fauna: "We stayed overnight on Wake Island in Quonset huts. Here the bottom bunk was preferable because rats used the top bunks for their own private runway."[80]

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[79] Harold M. Wright, 206

Medical personnel also dealt with differences in cultures among the international staff on board the aircraft. As Ziegler later remembered,

> One time on the way back to Hickam as I was going down the aisle with special diets, a Canadian patient called to me. He got as far as 'Oh Sister' when my medical technician assistant told him in no uncertain terms that he was speaking to an officer... I just caught him by the arm and quietly explained our tradition in the commonwealth countries of referring to us as nursing sisters. Far from it being a derogatory term, we much preferred it to being addressed by our rank.[81]

Other aspects of air evacuation were somewhat more stressful, such as one incident when, after leaving Hawaii for the mainland,

> our captain quietly warned us that we were having a bit of trouble and we might hear an unevenness in the motor. One of our patients, a Canadian paratrooper, noticed it immediately; he had flown enough to know motor sounds. I gave what I hoped was a reassuring answer when the captain called me and said we were at the point of no return and were going to turn back to Hawaii. He was going to do a wide circle and hoped it wouldn't be noticeable. Before long, this same paratrooper called me and told me he could see Search and Rescue aircraft outside the window. We were being parallelled by two Search and Rescue aircraft because of the number of people aboard. They had come from Hickam to catch up to us after the pilot radioed that he was turning back. They had large orange boats slung under their fuselage so they could rescue us if we had to ditch.

As if that wasn't enough, "As we got closer to Hickam, flying on three engines, we lost a second engine. Fortunately, it was on the opposite side from the other damaged engine so the pilot was able to balance the aircraft. When we touched down on the runway at Hickam, we lost our third engine and came to the end of the runway on one motor."[82] Unsurprisingly, everyone was relieved when the aircraft came to a stop.

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80. E.A. Landells, 618-620.
81. E.A. Landells, 618.
82. E.A. Landells, 620.

The chain of evacuation was thus as sophisticated (and in fact, longer) than it had been in the Second World War, because of the complex medical requirements demanded by the deployment of a brigade group off Canada's shores. Another symptom of that complexity was the depth of health-care work required. Treatment of the wounded and sick made up only one level; at another was research, which went hand-in-hand with medical operations overseas. By the middle part of the Korean War, Canada's Defence Research Board, formed in 1948 to handle DND's scientific work, had no fewer than nine panels looking into health-care issues, specifically Auditory Problems, Aviation Medicine, Antibiotics, Arctic Medical Research, Blood Substitutes and Blood Products, Frostbite and Immersion Foot, Management of Burns and Wounds, Nutrition, and Visual Problems.[83]

Closer to the front worked a Canadian Army Operational Research Team, which we have already seen looking into VD, and which acted as a detachment of the Canadian Army Operational Research Establishment, an entity separate from the Defence Research Board. Of fifteen "Representative Operational Research Problems" this group was expected to work on, however, initially only one was medical in nature: "To determine if there is a requirement for an armoured medical vehicle to evacuate casualties from forward areas."[84] To be fair, that list was compiled in April 1951, as the Operational Research (or OR) team first began to consider its task, but by early next year 25 Canadian Infantry Brigade Group was reporting that of eleven projects then under investigation, several dealt with health issues, including non-battle casualties within the formation, the incidence of venereal disease, casualties due to land mines, "reboards" (the medical reclassification of personnel after injury or illness), and battle casualties generally.[85] The latter were studied in as much detail as in the last years of the Second World War, the death rate, 119 out of 565 wounded, being 21 per cent, about the same as in the previous conflict. How long the survivors remained under treatment was also subject for study, those suffering from bullet wounds averaging 47 days while those struck with shrapnel needing only 29: "It appears therefore that fragment wounds have been considerably less severe than bullet wounds. This is presumably because most fragment wounds have been produced by small mortar fragments, rather than larger artillery shell fragments, which might be expected to produce wounds

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83. NA, RG 24, v.4129, 4-78-53, D.G. Thacker, Med Section, to Sy DRB, 4 Mar 52.
84. NA, RG 24, v.4206, 270-180-105-1, LGen G.G. Simonds, CGS, to CO 25 Cdn Inf Bde Gp, 2 Apr 51.
85. NA, RG 24, v.4206, 270-180-105-1, Maj H. Goodfellow, for CO 25 CIBG, to Army HQ, Ottawa, 31 Jan 52.

at least as severe as bullets."[86] One report focussed specifically on burns and fires, the use of various improvised sources of heat having caused the death of one soldier and hospitalized 49 others.[87]

Not all research at the time was focussed on operations in Korea, however, Defence Research Medical Laboratories, part of the DRB system, being engaged in so many projects by the early 1950s that it could not discuss them all in its annual report. To give just a few examples, it looked into issues concerning improved ration packs (arctic rations included), noise levels in various service aircraft, the passage of water vapour through textile fabrics, improved web equipment, joint stiffness in the cold (through animal studies), eye irritation caused by pressure-operated gasoline stoves, G-forces in RCAF flying personnel, respiratory patterns when breathing cold air or oxygen, and restriction of head movement as a means of preventing motion sickness. Nor was that all:

> A number of projects have involved studies on the demands made on personnel in various types of military activity. A more accurate appreciation of the limiting human factors in certain critical tasks (e.g. the tracking and interception of hostile aircraft) has been obtained, and some improvements in work layouts have been recommended. (e.g. a redesigned navigator's compartment was recommended to the RCAF, and was accepted).

The report added that "Long-range projects on the improvement of selection and training methods for the armed services have made substantial progress..." Various chemical warfare agents were tested, and "New information on the pharmacology of the nerve gases has been gained."[88] The following year, in the fall of 1953, the laboratory reported that in regards to nerve gas, "dabbing' a solution on the contaminated area "is a waste of time. Generous sluicing of the area, with water or with carbonate, is far more effective under the test conditions."[89] The research was perhaps inspired by the horrific possibilities posed by the war in Korea, but it was also applicable to the Cold War more generally.

In the end, therefore, the medical experience in Korea proved to be both more and less than it had been in the Second World War. Long-range air evacuation had been of extreme rarity in the previous conflict, and was certainly not as systematic in 1939-45 as it became in 1950-53. However, the medical branch never set up a field hospital, able to rely instead on Allies' facilities or on smaller units such as the field dressing station. That development was far more significant than medical practitioners could possibly have guessed at the time, for in the years that followed the whole concept of the field hospital fell by the wayside as new issues came to the fore. In regards to other matters, however, such as budgeting and research, the Korean War marked the beginning of a peak period in the history of Canada's armed services, with, as we have seen, ten times more money available for defence in 1953 than in 1947. If medical practitioners would have little opportunity to work in the field in the years following the armistice in the Korean peninsula, they would not be lacking for funds to conduct basic experiments—and for other endeavours.

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[86] NA, RG 24, v 4208, 270-180-105-1, Preliminary Report on Battle Casualties of 25 Canadian Infantry Brigade, 5 Dec 51.

[87] NA, RG 24, v 4208, 270-180-105-1, 1 Canadian Army Operational Research Team, Burns and Fires in 25 Canadian Infantry Brigade Group, 10 Jan 55.

[88] NA, RG 24, Acc 83-84/167, 360-4-25/0, M.G. Whillans, Superintendent DRML, Material for the Chairman's Annual Report, 8 Sep 52.

[89] NA, RG 24, Acc 83-84/167, 360-4-25/0, M.G. Whillans, Superintendent DRML, to A.M. Pennie, Sy, 8 Sep 53.

Chapter Three

The Depths of the Cold War

To policy-makers in the US and Canada, and elsewhere as well, Korea was seen as the opening salvo by the USSR and its satellites, the beginning of a general offensive against western Europe, North America, and their allies, colonies, and dependencies. The accuracy of such views will not be discussed here, but there is little doubt that in the 1950s and 1960s Canada was in a state of partial mobilization, the Second World War's Department of Munitions and Supply being revived as the Department of Defence Production in 1950, and defence budgets being increased dramatically in the years immediately following North Korea's invasion of its southern neighbour. Canada's despatch of a brigade group to Europe, the first time the country had sent an armed formation overseas in time of peace, reveals the seriousness of the situation. The government of the day did not think peace would last much longer, hence the shift from "leisurely rearmament," in historian Desmond Morton's words, to something more business-like. Admittedly, "On the whole, Canadians preferred to forget about Korea," long negotiations and no military end in sight creating a certain sense of apathy. War could be good for the economy: "If taxes rose and consumer spending was curbed, very few Canadians gave any evidence of suffering. Indeed the war and the accompanying United States rearmament banished the 1949-50 recession and ushered in renewed prosperity."[1]

The armed services entered something of a renaissance period at this time. The RCAF began receiving delivery of the jet-propelled Sabre fighter, but that was only a small part of the picture, as Minister of Defence Brooke Claxton "announced rearmament on a dramatic scale: 100 ships for the RCN, 40 squadrons for the RCAF, an infantry division for the army." Personnel strength rose from 47,000 to 104,000, although a possible fly in the ointment was the possibility that these people, and Canadian civilians as well, might become involved in a nuclear war. "As their share in North American air defence, citizens were urged to build and stock fall-out shelters. Newspaper articles explained the significance of heat, light, and blast in a nuclear explosion: radiation was slightly neglected. Teachers trained their students to crawl under desks and to look away from windows at the moment of detonation. The CBC began broadcasting around the clock to be available as anchor of a National Survival network. In theory, a prepared population would not only be more likely to survive but would also face the prospect of war with greater fortitude. Reality was different. Soviet propagandists could hardly have devised a more ingenious way to alarm and divide a population." What came to be called "National Survival" in fact gave Canadian peace movements added momentum.[2]

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[1] Desmond Morton, *A Military History of Canada: From Champlain to the Gulf War* (Toronto, 1992), 236.

Parallel to such developments was the unification of the three medical branches into a single service, a process that in complexity and its ability to cause discontent foreshadowed the general unification of the Canadian Armed Forces later on. It would be too easy, with the benefit of hindsight, to pass judgment on the process, and misleading as well; one can learn far more by attempting to understand events as they unfolded and how various institutions within the Department of National Defence reacted. The story properly begins in September 1945, a month after the end of the Second World War. Under new business at a meeting of the Personnel Members Committee was an item entitled "Unification of Medical and Pay Services in Post-War Permanent Forces," where a memorandum from the Chiefs of Staff Committee presented the problem: "The variance between Air Force, Navy, and Army physical standards, research requirements, etc and the administrative and command difficulties of 'attached personnel'," from one service to another. In considering various solutions, the PMC "pointed out that the benefits to be gained by complete unification may, or may not be available under partial unification and therefore should any one step be considered, the ultimate goal of complete unification or otherwise should be borne in mind."[3] Halfway measures might not suffice.

Canada was not alone in considering such a reorganization, and in 1946 in Britain a "Report on the Amalgamation of the Medical Services of the Armed Forces" was presented by a Committee on the Organization of the Common Services. In the chair was the Under-Secretary of State for War; members included a representative from each of the three fighting services and a secretariat, the whole having been appointed in

2. Desmond Morton, 245.
3. NA, RG 24, c.7755, Minutes of the 53rd Meeting Personnel Members Committee, 25 Sep 45.

January on the initiative of the Prime Minister's office. Its first recommendation is significant: that "the existing medical services of the Royal Navy, the Army and the Royal Air Force be combined into a single unified Health Service to be designated the Armed Forces Health Service (AFHS) and to be separate from and administered independently of the Armed Forces." Having investigated how other medical formations were organized, the committee noted that the Soviets had a single body, and even in the US, where "The medical service of the United States Navy is entirely separate from that of the Army," there was substantial coordination, "with the result that naval personnel were treated in the nearest hospital, irrespective of whether the hospital was under Army or Navy control."[4]

Organizationally, the Committee's ideas soon gelled, Major-General E.G. Weeks, the British Army's Adjutant-General, explaining in February that "In general terms the proposal is that there would be a Medical Director General Defence Forces and under him there would be a Head of the Medical Services for each of the Army, Navy and Airforce. It has been suggested that the proposed amalgamation would result in economy and uniformity."[5] That Canadians were thinking along similar lines is not surprising, since there had been a single medical service prior to the Second World War, and post-war retrenchment (the Cold War had not yet started) was a difficult time to try to maintain different branches. So a month after Weeks' clarifications in Britain, a meeting of Surgeon-Captain A. McCallum, Brigadier G.R.D. Farmer, and Group Captain A.A.G. Corbet agreed

> That it would be possible and feasible to effect a merger of the medical services of the three Armed Forces, Navy, Army and Air Force, under central direction. This experience of co-operation and combined efforts in the past wherein hospital services have been shared, personnel pooled, etc, would indicate quite clearly that such a merger could be accomplished without great difficulty.

For example, a given hospital would be maintained by the service that had the most personnel in its area, but accept patients from all three services. The meeting also agreed "that there be freedom between the medical services to arrange exchange of personnel where mutually agreeable for treatment, training and educational purposes in these hospitals." It was also noted that "A Central Medical Stores is already in existence for the supply and issue of medical stores to all three Services. This is an economical arrangement and should be continued." Finally, and as we have seen in another context,

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[4] NA, RG 24, v 20,875, CSC 9-11 (Envelope), Committee on the Organization of the Common Services, Report on the Amalgamation of the Medical Services of the Armed Forces, nd.

[5] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, MGen E.G. Weeks, Adj/Gen, to Sec Personnel Members Ctee, 15 Feb 46

> In order to attract into the Service the best type of graduates from Canadian medical schools, it is considered that once the question of pay has been settled, the service of Medical Officers should be so arranged that at least one third (1/3) of their time is devoted to clinical work. All are agreed that a scheme of short service commission of three or five years' service with a gratuity at expiration would be desirable. The advancement of the officer's professional career, whether clinical or administrative, is of the greatest importance in attracting the best type of graduates into the service.[6]

Then came the first hint of dissent, when the day following the above agreement Group Captain Corbet advised Brigadier Farmer that "I do not imply that a merger of the three Armed Forces medical services is recommended by the RCAF."[7] There would be further disagreements in the years to come.

One forum for airing such differing views was the Personnel Members Committee, which in January 1947 called for arguments for and against unification. In favour was the fact that a larger service would offer wider career prospects to medical practitioners, and thus help recruiting; more in the way of professional training could also be provided. Recruiting itself could be more centralized and hence rendered more efficient, as could the organization of medical stores. Hospitals and the smaller Medical Inspection Rooms (or MIRs) could be standardized, though, if necessary, with adjustments to meet local requirements. Another advantage would be better co-ordination of research, while, perhaps of greater import in time of peace, "The financial savings estimated by adoption of amalgamation in this era of economy is [sic] a vital factor." Arguments against unification were not lacking, however, financial savings proving to be a false economy if the fighting services were unable to properly mobilize should war break out; the savings supporters pointed to might in fact be due to simple reductions, rather than amalgamation. Detractors could also point out that the single medical service, the army's, that had existed before the Second World War had been abandoned because "it was proved that specialized knowledge for the Navy and Air Force regarding administration and medicine (aviation medicine etc) was essential, and it was found this could not be done efficiently by one medical service, especially during a rapidly expanding period." A superior approach might in fact lie with better coordination, already well

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6. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, Surg Capt A. McCallum, Brig G.R.D. Farmer, and Gp Capt A.A.G. Corbet to PMC through AG, 8 Mar 46.
7. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, GpCapt A.A.G. Corbet to Brig G.R.D. Farmer, 9 Mar 46.

underway, "whereby all three services participate in the overall functions and share it on a geographical basis." In fact, hospitals and medical inspection rooms already operated to serve all three services, where "MIR complements are established to meet the local situation, i.e. type of flying being performed, number of ships operating in the area whether in full commission or in reserve, etc."[8]

It seemed, however, at least for a while, that the decision would be taken out of the hands of such collegial groupings. In May 1947 the issue came before Cabinet, and ministers recommended "That all medical services of the Armed Forces be consolidated as rapidly as possible," and "That, for the time being, the medical services of Veterans Affairs should retain their separate entity, but that they should, at the same time, be consolidated intra-departmentally to the fullest extent." Finally, the ministers also suggested "That the responsibility for providing all other government medical services, with the exception of the National Research Council, be transferred to the Department of National Health and Welfare..." Consolidation was thus the order of the day, the Minister of National Defence noting "that progress was being made in bringing together the medical services of the Army, Navy and Air Force. These services would function under one head, and there would be no duplication, but the form which consolidation would take eventually might not be "amalgamation" in the sense that all three were fully integrated and combined in every respect."[9] In fact, in the years that followed, those could be forgiven who thought integration in any form would simply never come to pass.

One oft-repeated justification for unifying the medical branches was the lack of doctors. J.A. MacFarlane of the University of Toronto (and a DND advisor on medical issues) explained in 1950

> That one of the reasons why doctors are not anxious to enlist in any of the three medical services is because each of them as a separate unit is too small to allow scope for the moderately ambitious young man to make a career. I am certain that with a unified service and the members being moved from one service to another, seeing something of medicine and service methods in each, it would present much more attractive possibilities than does a career in any of the existing separate medical services.[10]

The Personnel Members Committee, however, aware of some of the dissenting voices noted above, saw things differently: "As the prime

[8] NA, RG 24, v 7755, Minutes of the 114th Meeting of the Personnel Members Committee, 28 Jan 47.

[9] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 1, Maj R.B. Thackaberry, MA to CGS, to AG, 3 Jun 47.

[10] NA, RG 24, 83-84/167, 20-1-1, pt 2, J.A. MacFarlane, Dean Faculty of Med Toronto, to H.A. Procter, Sec DMDSAB, 28 Oct 50.

reason for this recommendation is to assist in securing medical and dental officers for the Services, PMC was of the opinion that no useful purpose would be served, at the present time, in reopening the discussions on unification. It was felt that this would only cause dissatisfaction among the medical officers in the three Services and would more than likely affect directly the recruiting programme for doctors."[11]

Opposition came from other corners as well, the RCN, in 1952, replying to a recommendation to amalgamate from a Committee on the Integration of the Medical Services by stating bluntly that "The proposal to establish a single nursing service was not considered desirable or efficient," and that integration would not bring more medical officers into the system. Even the Army and RCAF, which at that time supported some level of unification, insisted that "branches of the Services should not lose their identity as such by being amalgamated and pride of Service should be fostered rather than liquidated,"[12] though the possibility that medical practitioners might actually take pride in an amalgamated health service was not addressed. Each fighting service was a society in its own right, with its own traditions, history, and even language, and the creation of a separate, medical society was simply not acceptable. Although in July 1952 the Defence Council agreed to the establishment of an Armed Forces Medical Council, lest anyone be concerned that this was a step towards integration, the body's terms of reference would "be modified to limit the duties and functions of the medical council to purely professional matters."[13]

Amalgamation proceeded apace, however, through a form of guerilla administration, the Inter-Service Medical Committee advising in 1954 that "Since 1948 an effort has been made to allocate various areas of responsibility to the Navy, Army, and Air Force Medical Services. From the standpoint of providing treatment facilities by one of the Armed Forces Medical Services in any one area, considerable success has been achieved," in that "Where any one of the three Armed Forces Medical Services already has a hospital, large or small, that hospital shall be responsible for providing such medical and surgical care as is within the capacity of the hospital establishment for all the Armed Forces personnel in that area in which the hospital is located."[14]

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[11] NA, RG 24, 83-84/167, 20-1-1, pt 2, Extracts from the Minutes of 304(a) Meeting of Personnel Members Committee, 14 Nov 50.

[12] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, Extract from the Minutes of the 378th Meeting of the Personnel Members Committee, 26 Jun 52.

[13] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, LCdr R.H. Leir, Sec PMC, to Sec ISMC, 31 Jul 52.

[14] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, Lt W.A. Walsh, Sec ISMC, to Sec PMC, 1 Nov 54.

In 1957, General Charles Foulkes, Chairman of the Chiefs of Staff Committee, reported that

> continuing studies were being undertaken to effect economy and eliminate duplication in the Services. The Minister has also stated in Parliament that the integration of the Medical Services is proceeding. In this connection, authority for the integration of the larger Service hospitals in Canada on a tri-service basis has already been given and planning is progressing for its implementation. In addition, a tri-service pool of clinical specialists and the Medical Joint Training Centre have been formed and are operating. It is therefore considered that further studies should now be undertaken for consideration by the Chiefs of Staff as to how best further integration in the Medical Services can be achieved and the best method for its implementation.[15]

Yet another committee was struck to look into the matter, and yet another report was tabled recommending integration: "In order to implement policy decisions affecting the tri-Service hospitals and the Medical Joint Training Centre (hereinafter called joint medical establishments), it was considered that some central authority should be charged with the responsibility for ... the co-ordination and control of the professional and technical management, including rules, regulations and the inspection programme, of the joint medical establishments," and "the co-ordination and control of advanced professional training and employment of all medical officers after they have reached the level of graded clinical specialists." Control over the latter, however, would not be complete, aviation medicine and underwater physiology being excepted. The committee recommended the Inter-Service Medical Committee be given the necessary authority, transforming it into an executive body called the Joint Services Medical Board, its chair becoming the Director-General Joint Medical Services.[16] According to General Foulkes, the resulting organization would seek an "economy of operation" through integration.[17]

Brigadier K.A. Hunter became Director-General Joint Medical Services on 31 October 1957,[18] and a year later the Personnel Members Committee agreed to unification according to a detailed plan. In part, it would see the appointment of a Surgeon-General; also, "all officers and men of the Regular Force and Reserves now forming part of or

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15. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Gen Charles Foulkes, Chair Chiefs of Staff, to CAS, CGS, CNS, 5 Jun 57.
16. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Gen Charles Foulkes, Chair Chiefs of Staff, to CAS, CGS, CNS, CDRB, 13 Aug 57.
17. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Gen Charles Foulkes, Chair Chiefs of Staff, to Chair PMC, 24 Sep 57.
18. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 10, Gen Charles Foulkes, Chair Chiefs of Staff, to CNS, CGS, CAS, DM, Def Sec, and Sec PMC, 5 Nov 57.

subsequently enrolled in the medical establishment of each service will constitute the 'Canadian Forces Medical Services'..." The new CFMS would not, however, be the final arbiter of things medical, and "All policies of the Surgeon-General affecting more than one Service will be subject to the approval of Personnel Members Committee, and his policies affecting only one service will be subject to the approval of the Personnel Member from that service... The Surgeon-General will be an ex-officio member of Personnel Members Committee for medical matters." Medical personnel of all three services would become part of the CFMS, and "Ministerial approval will be obtained of regulations conferring upon all members of the CFMS mutual powers of command,"[19] so that a navy petty officer could, for example, issue orders to an army corporal. In regards to logistics, "Supplies and equipment for CFMS will be purchased as at present through Army channels..." Training, meanwhile, "will be under the direction of the Surgeon-General in accordance with policy approved by PMC," while enrolment "will be in one of the present services, but as enrolment will be for service in a list, corps, branch or trade already included in the CFMS, enrolment will cause the officer or man to belong to that organization. Professional qualifications for enrolment will be established by the Surgeon-General and candidates must be acceptable to the Surgeon-General before being enrolled."[20] All in all, a sweeping decision.

There was still, however, much dissatisfaction with the process within the fighting services, even given General Foulkes' explanation that

> The objective of this unification is to provide the most flexible, efficient, and economical medical services for the Armed Forces. The flexibility which will be attained by the provision of a single policy and control for the Forces medical service will also result in advantages to the personnel of that service... Consequent upon the combination of the three medical services, the consolidated rank structure will offer wider career possibilities applicable to all officers and other personnel. Similarly, the range of professional and technical training, experience and employment will be increased for all ranks.[21]

Not everyone was convinced. Air Vice Marshal J.G. Kerr, the Air Member for Personnel, noted a few days later that of the ten subcommittees organized by the new Surgeon General, for operations and training, hospitals and finance, supply, nursing services, officer personnel careers, consultants in surgery and medicine, statistics and standards, preventive and environmental medicine, aviation medicine, and others,

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19. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, Special Meeting—PMC, 28 Oct 58.
20. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, Special Meeting—PMC, 28 Oct 58.
21. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, Gen Charles Foulkes to DeWolf, Campbell, and Clark, 5 Nov 58.

"seven are chaired by officers of the RCAMC."[22] The reply was rather harsh, not only pointing out that these were temporary working parties, not subcommittees, but that "a considerable number of senior officers of DGMS (Air) headquarters were absent in Texas at the time of the formation of the working parties."[23]

How unification fared in the years that followed can be traced in part through a series of historical snapshots provided by the Minister of National Defence in his annual "Tri-Service Information Book". That covering the year 1960 announced that

> The medical services of the Navy, Army and Air Force were integrated as The Canadian Forces Medical Service, effective 15 January, 1959. For the first year, as an evolutionary phase, the former service Medical Directors continued to function as before. On 15 January, 1960, the appointments of Medical Director General, Navy, and Directors General Medical Services, Army and Air Force, were abolished; the Canadian Defence Forces now have an integrated medical service directed by the Surgeon General, Canadian Forces. The channels of command and administration of the medical services in Canada and overseas have not been altered as yet, but planning to this end is progressing.

Total personnel were 401 medical officers of an establishment of 478; other male officers were 225 of 254, female officers 383 of 508, and other ranks 2557 of 2705.[24] It remained to be seen whether unification would help make up such deficits.

The following year integration was still an important topic in the Minister's annual report: "In accordance with the philosophy of integration to realize manpower savings, planning has proceeded to integrate medical facilities in the Vancouver, Edmonton, Calgary, Winnipeg, Montreal and Halifax metropolitan areas, and at outlying stations. As the integration of recruiting centres proceeds, the medical examination requirements for recruits will likewise be combined."

The report further noted that "Financial arrangements for the three Services have now been brought into a common budget ... with a centralized monitoring system in the Surgeon General Staff so that expenditures can be carefully analyzed and justified, particularly in respect to the employment of civilian medical officers and nurses." Strength was 418 medical officers (two of them women) out of a an establishment of 475, 221 male officers of 231, 415 female officers of 508, and 2612 ORs of 2687.[25] By early 1963, however, it was clear integration would

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22. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, AVM J.G. Kerr, AMP, to Chair PMC, 17 Nov 58.
23. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, MGen K.A. Hunter to Chair PMC, 21 Nov 58.
24. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, Minister's Tri-service Information Book—1960, The Canadian Forces Medical Service.

Medical Organization at National Defence Headquarters

Before the Unification of the Medical Service

The Minister, with advice from the Canadian Forces Medical Council
(Latter includes Director General Medical Services Army,
Medical Director General RCN,
and Director Medical Services RCAF.)

Personnel Members' Committee

Inter-Service Medical Committee

After the Unification of the Medical Service

The Minister, with advice from the Canadian Forces Medical Council.
(Latter includes Surgeon General)

Personnel Members' Committee
Inter-Service Medical Committee

After the Unification of the Canadian Armed Forces

Defence Council
Chief of the Defence Staff
Chief of Personnel
Surgeon General

take some time—presuming it was achieved at all—the Minister admitting that "The aim of a common budget for the CFMS has not been attained," while total personnel strength stood at 3715 out of an establishment of 3991.[26]

Of complications there were many, the integration of nursing sisters being but one. It was no help that, according to Surgeon Rear-Admiral T.B. McLean, the Surgeon General, "Each service is suffering a shortage of nursing sisters," with 54 of an establishment of 76 in the RCN, 136 of 196 in the Army, and 189 of 218 in the RCAF, a total deficit of almost 23 per cent. Integration might help mitigate the shortage by eliminating the duplication of nursing sister positions, but that in itself was a challenge. First was the simple issue of terminology, the navy having used the expression "Nursing Officer" for some years; the Surgeon General suggested "Nursing Sister" be used by all. To standardize

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25. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 20, Surg RAdm T.B. McLean, SG, Minister's Tri-service Information Book—1961, The Canadian Forces Medical Service, 9 Mar 61
26. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 25, SG, Minister's Tri-service Information Book—1963, The Canadian Forces Medical Service, 1 Feb 63.

recruiting, he further suggested that the only method of entry be on a short service commission of two, three, four, or five years, conversion to a permanent commission being possible only after thirty months' service. Further, "Rank on enrolment be Acting (Paid) Sub-Lieutenant (Navy); Acting (Paid) Lieutenant (Army); and Acting (Paid) Flying Officer (RCAF); until nursing sisters have completed the Nurses' Orientation Course at the Canadian Forces Medical Service Training Centre, when rank shall be confirmed, with seniority dated from date of enrolment."

Acting rank, and hence higher pay, was hoped to increase recruiting. Similarly, the Surgeon General recommended that "The policy of promotion of Army and RCAF nursing sisters to Captain and Flight Lieutenant respectively, after six years of satisfactory service in former rank, also to apply to the Navy nursing sisters who similarly should be promoted to Lieutenant."[27]

Other ranks were another level of complexity altogether, given the number of different trades represented, and Wing Commander G. Broadley of the Inter-Service Medical Committee freely admitted that "The amalgamation of the three Services medical organization has caused some very complex problems with regard to Tri-Service medical tradesmen, trade structure, careers, grouping, ranks and training." A course at group 1, or entry level, had started at the Canadian Forces Medical Service Training Centre (CFMSTC) at Camp Borden for Medical Assistants of the RCAF and the Canadian Army, and a syllabus and curriculum had been agreed to by those two services, but the navy had yet to be incorporated, and "Discussions between the RCAF and Cdn Army indicates [sic] there are difficulties in setting up training for groups 2 and 3." An additional barrier to integration was the lack of common structure:

> There is very little uniformity in the trades structure and requirements for medical tradesmen of the RCN, Cdn Army and RCAF. At present there are 14 separate trades in the Army, 7 in the RCN and 7 in the RCAF. These trades encompass all of the tasks carried out by other rank medical personnel in the three Services but there is a great deal of variation in the assignment of tasks to trades. This is apparent in the number of trades provided in each Service. An analysis reveals that, although trade specifications in some trades have some similarity and although many tradesmen can be interchanged in the field of hospital care, there are large differences in the training, duties and standards of trade grouping when it comes to special field and shipboard requirements.[28]

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27. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 23 Mar 60.
28. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, W/C G. Broadley, Chair ISMC, to Chair PMC, 30 Mar 60.

Such bodies as the Inter-Services Trades Committee had a lot of work ahead of them.

At the other end of the chain of command, someone else was getting used to a new job—the Surgeon General. Terms of reference for the position were certainly comprehensive, beginning with the admonition that he (years later, also she) would be "responsible to PMC for all medical policy and matters common to more than one service and to each service Member for medical policy and matters special to that service. Within approved policy he shall be responsible for providing direction and control of all medical requirements of the Canadian Forces. He shall be an ex officio member of PMC for medical matters." If anyone were to accuse the medical service of empire building, here was the emperor, with the Personnel Members Committee taking on the role of Roman Senate. As if that were not enough, the Surgeon General was also responsible for the "Medical care and health of all personnel who are the responsibility of the Canadian Forces, and advice on the provision of adequate medical facilities to meet this requirement." In regards to the medical practitioners themselves, one of his duties was to recommend "the recruiting, selection, appointment, promotion, establishment, disposition and release of all medical service personnel," including "Advice and direction in the professional, technical, special and general training of all medical service personnel, and advice with reference to the training, where indicated, of others in first aid..." Where armed services members were concerned, the Surgeon General was responsible for "Medical standards for all Forces personnel with particular stress as to their application for entry and release in accordance with the requirements of the individual forces." Similarly, he was to see to "The maintenance of medical records and the collection, compilation, interpretation and application of DND medical statistics."[29]

Furthermore, in regards to health issues he was to provide "Advice and direction in the supervision and application of preventive and environmental medicine in general, with particular stress to each service in its special and peculiar environmental problems and research." To that end, and to carry out his countless other duties, the Surgeon General was responsible for "Medically related liaison with all appropriate components of the Department of National Defence, other government departments and other appropriate organizations and authorities." Further, similar tasks included "The preparation of the medical service financial budget and supervision of expenditures within the budget," "The provision and distribution of all medical supplies and equipment," and "The administration of the Opium and Narcotic Drug Act within the Forces."[30] In short, like the captain of a ship the Surgeon General of the Canadian Forces Medical Service was responsible for everything.

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[29] NA, RG 24, Acc 83-84/167, Box 7834, 2-6125-203/70, PMC Joint Organization Order 25, Appx A, Terms of Reference of the Surgeon General, Canadian Forces, nd.

Other tasks would be added in the years that followed, as the consequences of forming a single medical service played themselves out and the nascent organization gathered within itself the necessary infrastructure. In January 1962 policy-makers decided that the Surgeon General controlled "CFMS installations except for those functions of authority which are specifically allotted elsewhere by organization orders." Also, he exercised "direct staff control over technical medical activities of the CFMS," and the list expanded from there, as a 1962 document included the following: "Develops and co-ordinates the execution of the medical part of staff plans for peace and war," "Co-ordinates the use of CFMS manpower and, in conjunction with PMC and the Inter-Service Establishment Committee, controls the establishment of CFMS facilities," "Recommends and assists in design of accommodation and equipment for the CFMS," and "Administers the St John Ambulance DND Special Centre."[31] There were further additions—and the odd revision—in the years that followed. In 1965, to give just one example, the Surgeon General's duties expanded slightly with the addition of the responsibility to act "as the Health Authority for the Canadian Forces under the Atomic Energy Control Act."[32]

Given such responsibilities, the Surgeon General quickly concluded that he needed a headquarters of his own, and in 1962 the PMC announced that "A study has now been completed by the Surgeon General and it has been determined that under actual working conditions the minimum staff capable of carrying out the role assigned to the Surgeon General's staff was 110." In a plea to the Personnel Members Committee, "The Surgeon General informed the members that approval of the proposed establishment was becoming an urgent matter, as the CFMS were losing qualified civilian personnel as no vacancies had been authorized for them"[33] within the staff. The PMC approved the Surgeon General's recommended establishment, but the very principle of a centralized medical service with its own lines of communication was still being debated. Rear-Admiral P.D. Budge, the navy's Chief of Naval Personnel (CNP), was one voice of dissent as he wrote to the

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[30] NA, RG 24, Acc 83-84/167, Box 7834, 2-6125-203/70, PMC Joint Organization Order 25, Appx A, Terms of Reference of the Surgeon General, Canadian Forces, nd.

[31] NA, RG 24, Acc 83-84/167, Box 7834, 2-6125-203/70, G/C W.J.F. Young, for SG, to DMT, 16 Jan 62.

[32] NA, RG 24, Acc 83-84/167, Box 7834, 2-6125-203/70, P 1901-4203/00 (DGPR), Annx B, Surgeon General, Apr 65.

[33] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, PMC 1 Feb 62.

Personnel Members Committee that "The proposed channels of communication are not acceptable to the RCN."[34]

His explanation outlined the communications issue in detail. "The RCN maintains relatively rigid channels of communication and correspondence involving any matter of importance, policy, principle, controversy, discipline, interpretation of or departure from regulations or orders..." Also, he noted "alterations to regulations or appeal against decisions from Naval Headquarters are forwarded in every case through the chain of command to the Naval Secretary," so that "letters received in the commands from Naval Headquarters are never from a member of the Naval Board or a director or some lesser personage at Naval Headquarters, but from the Naval Secretary, the central authority who speaks with the voice of Naval Headquarters." However, Rear-Admiral Budge noted,

> The Surgeon General has been sending directives to local service authorities in the Commands on various matters. This has been the cause of considerable confusion. Complaints have been received from Senior Officers in Chief Command who point out that their responsibility is to the Chief of the Naval Staff and that the Surgeon General has no direct authority over them... if the Surgeon General is permitted to correspond on all matters direct with service commands, he would in fact have a greater authority in this regard than any member of the Naval Board. The Deputy Minister and his staff does [sic] not have authority to correspond direct with the Commands.

He recommended that "On other than routine medical or technical matters the conduct of correspondence outside of National Defence Headquarters shall be in accordance with the normal practice of the service concerned,"[35] with the result that medical practitioners in the RCN would use navy channels of communication and not the Canadian Forces Medical Service chain of command.

The CFMS would continue to try to create one, however, as it had since its formation in early 1959 (or since the creation of the Medical Corps in 1904). As Surgeon General K.A. Hunter explained, as of September 1959 21 separate medical staffs operated at 3 RCN, 4 Army, and 6 RCAF headquarters with a further 8 Area medical staffs within the Army. He recommended these be replaced with 10 regional and sub-regional staffs for the Pacific, Alberta-North West Territories, the Prairies, Ontario, Western Ontario, Ottawa Valley, Quebec, Eastern

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[34] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, RAdm P.D. Budge, CNP, to Sec PMC, 6 Apr 62.

[35] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, RAdm P.D. Budge, CNP, to Sec PMC, 6 Apr 62.

Quebec, Atlantic, and New Brunswick. The total personnel establishment for these would represent a 24 per cent reduction of current strength, with salary savings of about $200,000 per year. Additionally, "economies will be effected as the result of the establishment of joint MIRs [Medical Inspection Rooms], joint recruit examination centres and in the hiring of civilian medical services." He noted, however, that "In Europe the two operational formations, the Army Brigade Group and the Air Division, must each have their CFMS staff because of their separate operational commitments."[36]

Objections from the fighting services were many, the RCAF concerned about where medical documents would be filed and the army seeking to maintain its own medical staffs at Command and Area headquarters. As far as higher authority was concerned, however, the die was cast; the Personnel Members Committee noted that

> The monetary saving of ten medical officers alone, at an average salary of $7,853.00 for 1959, plus thirty other staff, in itself makes implementation mandatory. Further delay in implementing this proposal will most seriously affect the major premise of integration in both the functional and economic aspects.[37]

The PMC was not entirely rigid, however—nor was it unanimous—so the Army could still make its case for General Officers Commanding and Area Commanders to have their own medical staffs, and the RCAF could argue the need to have a Flying Personnel Medical Officer (FPMO) in each of its operational commands. It was up to the Chiefs of Staff to decide, though the Surgeon General insisted that a single region-based system would have no "difficulty in providing the required services to the command organizations of the Armed Forces." In effect, the Regional Surgeon headquartered in Toronto would also serve the army's Central Area Headquarters, to give just one example. Still, in June 1960[38] the Personnel Members Committee decided that "the SG would revise his CFMS Regional Organization plan to indicate that medical advisers would be provided at command, area and equivalent headquarters," and that "a FPMO would be permanently stationed at MAC HQ,"[39] or Maritime Air Command Headquarters. Not all practitioners, therefore, would be part of the CFMS chain of command.

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[36] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 15, MGen K.A. Hunter, SG, Supporting Data for Personnel Members Ctee, 22 Sep 59.

[37] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, Surg VAdm T.B. McLean, SG, to Sec PMC, 23 Feb 60.

[38] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, Extract from the 661st Meeting of Chiefs of Staff, 6 May 60.

[39] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, PMC 2 Jun 60.

The Surgeon General refused to give up, and in order for Regional Medical Officers to carry out their "separate duties" while seeking "to overcome the major areas of concern previously expressed by the Army and the RCAF," he now recommended the formation of six regional and nine sub-regional headquarters: "The role of CFMS Regional Headquarters is to represent the Surgeon General and advise and recommend on the provision and standards of medical services and the co-ordinated use of medical personnel and facilities in each region... In addition, Regional and Sub-Regional Medical Headquarters will perform medical duties peculiar to the functions and operation of Service commands." Regional headquarters would be retained or established for the Atlantic, Quebec, Ontario, Prairie, Alberta, and Pacific; such positions as RCN Command Medical Officer, Staff Officer (Medical) to the Commanding Officer Naval Divisions, Command Medical Officer in the Army, Area Medical Officer, also in the Army, and Staff Officer Medical Services in the RCAF would be shut down. Thus a Regional Medical Officer would be responsible to "the Surgeon General, as his representative and monitoring officer within a prescribed geographical region," but also to "the senior officer of a service command having its headquarters within the medical region, for medical advice and the performance of medical duties peculiar to the function of that command."[40]

The Army initially disagreed with the plan on the grounds that it "did not meet the Army's requirement for the medical advisers to be appointed to the staffs of GOCs and area commanders, and under their command at all times."[41] After much to-ing and fro-ing, however, the Army endorsed the plan "provided certain stipulations could be written into the Joint Organization Order. Briefly the terms of reference of the medical advisers should explicitly define their specific responsibilities to provide the required support to the Army,"[42] therefore ending that round of administrative boxing.

It was not the last such disagreement, however; a June 1962 draft Joint Organization Order for the regional and sub-regional headquarters was put on hold by the Personnel Members Committee to await "comments, if any, from Service command headquarters."[43] The Surgeon General, Rear-Admiral T.B. McLean, put his foot down, writing that "on mature consideration, I am quite unwilling to amend the submission further, particularly in respect to any proposal that there should be

[40] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 1 Nov 61.

[41] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, PMC 7 Dec 61.

[42] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, PMC 1 Feb 62.

[43] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, PMC 14 Jun 62.

individual officers permanently divorced from the Regional CFMS HQ," to Flag Officers, General Officers Commanding, or Air Officers Commanding,

> to perform some specific duty such as planning for survival operations [following a nuclear attack] or advice on aviation medicine, because I consider that, in effect, this would destroy the regional concept, and because I do not think that such officers would be fully employed performing these duties.

He pointed out that, according to the terms of reference,

> If a local commander should feel that under the regional organization he is not receiving the specialist support or advice that he requires, his recourse is simple: first appeal to the regional surgeon and failing satisfaction, to myself and his own Service Chief at NDHQ.

McLean even went so far as to threaten to go over the PMC's collective heads. The fact was that, in his view, "The cumbersome method of administration to which I and Command staffs are forced to resort under our present organization prejudices unity of purpose, prevents the growth of an essential loyalty to the CFMS concept, enhances our establishment and manning difficulties and has in consequence an adverse affect on the morale of the Medical Branch."[44] It was time for unification to become an established fact.

By the end of 1962, the integrationists had prevailed, and the CFMS regional and sub-regional headquarters were to be formed as of 1 January 1963, according to Joint Organization Order No 37. In the Atlantic Region there would be sub-regions in Newfoundland and New Brunswick, while in Quebec there would be a sub-region for Quebec City (Valcartier); the Ottawa Valley Medical Region would remain undivided; the Ontario Medical Region would incorporate an Eastern Ontario (Kingston), a Central Ontario (Trenton), a Southern Ontario (Toronto), and a Western Ontario (London) sub-region; the Prairie Medical Region would include a Prairie Medical Sub-Region (Saskatchewan); the Alberta Medical Region would be undivided; and the Pacific Medical Region would have a Pacific Medical Sub-Region (Vancouver). In keeping with the Surgeon General's recommendations, "The role of CFMS regional headquarters is to represent the Surgeon General and advise on the provision of standards of medical services and the co-ordinated use of medical personnel and facilities in each region," while "In addition, regional and sub-regional medical headquarters will perform medical duties peculiar to the functions and operation of Service

[44] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, Surg RAdm T.B. McLean, SG, to Chair PMC, 22 Jun 62.

commands." Under "Channels of Communication," the order established that for "matters of aviation medicine and flight safety, a direct channel of communication shall be established between appropriate Service commands, the Institute of Aviation Medicine, and flight surgeons on regional and sub-regional headquarters."[45] With only a little compromise, the Surgeon General seemed to have gotten his way.

He was learning, however, that within the armed services the only thing that remained unchanged was change itself, and in 1964 plans to reorganize National Defence Headquarters brought renewed discussions about the position and role of the Surgeon General, who at the time was Rear-Admiral W.J. Elliott. It was all part of the government's plan to integrate the three fighting arms into a unified Canadian Armed Forces, but as he advised the Defence Medical Association,

> you will find the medical service under the Chief of Personnel, listed down with Welfare, Pay, Chaplains, and so on. This was presumably based on the British system where medical services come under the Personnel Branch. While this method may be 'traditional' it is interesting to note that some medical services in the Western world come directly under the Chief of Staff.

He further noted, however, that although "we are responsible to the Chief of Personnel for the personnel policies of the Canadian Forces Medical Service for routine administration," in regards to health and medical matters "we have direct access to all Branch Chiefs and the Chief of Defence Staff, as appropriate."[46]

A year later, government plans had solidified into detail: the Army, Navy, and Air Force were to be replaced by various autonomous commands, namely Mobile Command (to replace the army in Canada), 1 Air Division in Germany, 4th Canadian Infantry Brigade Group in Germany, Air Defence Command to protect Canada from Soviet attack, Maritime Command for naval operations, Air Transport Command, Training Command, and Matériel Command. The Surgeon General had not obtained the autonomy he wanted, but had lateral communications with the Chief of Defence Staff and others, and as for the new Canadian Armed Forces,

> While some minor adjustments may be necessary in our Canadian Forces Medical Service organization to provide medical advice and support to the functional commanders in order that they may carry out their assigned operational responsibilities, it would appear that those medical functions which are catered to on a regional basis will continue to be controlled

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[45] NA, RG 24, v.22,460, 2008-1, Joint Organization Order No 37, 20 Dec 62.

[46] NA, MG28, I157, v.2, DMA Proceedings of Annual Meeting, 26-27 Nov 64; Appx B.

> from Headquarters by the Surgeon General. Mobile Command may require medical staff and this may or may not necessitate alterations...[47]

In fact, all the commands listed above, and not just Mobile Command, would control the medical practitioners that were part of their organization, whether they were in field ambulances or within battalions, squadrons, or ships. The Surgeon General's authority and responsibility would be limited to such issues as training and career progression, so although he had won most of his battles in 1959, his successors saw many of the fruits of such victories wither by the end of the 1960s.

Through all of this the armed services were preparing for mobilization, and even if it was partial in scope and turned out to be for a war that never broke out, it was still a difficult and complicated, almost chaotic, undertaking. The medical branches, for example, needed to know something of the challenges they might face in a potential theatre of war, and at a 21 August 1950 meeting of the Personnel Members Committee, officers "were of the opinion that the Medical Services should be in a position to know which diseases may be endemic in possible zones of operation." In the view of Group Captain J.A. Mahoney, who chaired the ISMC,

> The field of Medical Intelligence is a very complex one and can only be explored, charted and recorded through effort and investigation. Such is being done at the present time by both the US and UK, and it is not the intention of this Committee to recommend that Canada should duplicate these efforts.

However, he continued, so "that Canada may benefit from the labours of these nations, it is necessary that recognized channels of communication be available and it is considered these should be through the Joint Intelligence Bureau." Nor was that all, as "the work entailed in collecting and adapting such information to our needs, as may be available, requires the full time efforts of a medical officer specially trained in public health." The fact of the matter was, according to Mahoney, that "Under existing condition the Medical Services of the Armed Forces are not in a position to obtain or collect the essential detailed information required for operations in certain possible zones of conflict."[48] The PMC, however, felt that already-existing sources of information, such as medical journals and liaison with the US and UK, should suffice, and denied the request.

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[47] NA, MG28, I157, v.2, DMA, Proceedings of Annual Meeting, 25-26 Nov 65.

[48] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, G/C J.A. Mahoney, A/Chair ISMC, to Sec PMC, 21 Aug 50.

The ISMC, however, had an ally in the Joint Intelligence Committee, which approached the PMC with an appeal of its own. It pointed out the requirement

> To provide the medical data for the preparation and carrying out of our own operational plans. The detailed requirements are for intelligence on human and animal diseases and disease vectors and the incidence of epidemics; availability of hospital, medical and nursing facilities, services, stores and transport; the public health aspects of water supply and sewage systems, veterinary facilities and services.

It also needed to know, as regarded foreign countries, such things as

> capacity to combat chemical, bacteriological, and radiological warfare; evidence of bringing into force of medical and veterinary preparations or precautions which indicate the intention to use these weapons or fear of imminent attack; adequacy of medical arrangements, as one aspect of civil defence, to meet attack by A-bombs or conventional bombs,

concerns that preceded the Gulf War by over four decades. Nor was that all, since "medical intelligence is of value at all times for any armed service personnel in foreign countries on manoeuvres, on a cruise or on a flight." Finally, in something of a repetition of previous concerns (no doubt to underline their importance), the Joint Intelligence Committee noted that "The importance of medical intelligence will increase with the increasing prospect of bacteriological, chemical, and radiological warfare..." Although it did not intend to duplicate what was being done in the US and the UK, the committee insisted that "it is necessary to establish active channels of communication and apply the full-time efforts of a medical officer trained in public health" to keep abreast of developments in those two allied countries.[49] The Personnel Members Committee reversed its previous decision and approved the request.

As for intelligence, so for supply, Major General W.H.S. Macklin, the Adjutant-General, reporting in September 1950 (long before unification) that he had discussed the issue of medical planning for mobilization:

> I had recently put in an estimate for more than a million dollars for the stock-piling of medical mobilization stores such as X-ray machines, surgical instruments and a host of other items... The Army supplies the medical stores for the other Services, and the RCAF medical service recently presented its plan, or relevant portions of it, to the DGMS in order that stores might be procured. I understand that the Air Force requirements for mobilization stores may run from a million-and-a-half to two million dollars. There will also be a Naval requirement.

Therefore, it was an easy matter to determine "that the combined stock-piling requirements of the three Services may run to three or even four million dollars." It was a lot of matériel, including "a good deal of X-ray machinery, hospital equipment, and so on, and it seems obvious to me that unless there is some coordination of the various Service plans there will be in some places duplication of facilities and consequent waste of valuable and scarce equipment and equally valuable and scarce medical and other manpower." Macklin then asked a perfectly reasonable question.

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[49] NA, RG 24, v.5386, 47-13-1, W/C G.H. Newsome, Sec Joint Int Cttee, to Sec PMC, 25 Sep 50.

> Do you not think that the three medical services should get together and see if a certain amount of pooling of facilities on mobilization would not be practicable[?] I know that everybody likes to run their own show at such times, but I strongly suspect that if we do not produce an economical and co-ordinated plan beforehand the blast of criticism from the civilian medical profession and the public will be such that we might be forced hastily to improvise such a plan after mobilization starts.[50]

The logic of his argument was undeniable.

The reference to "the civilian medical profession and the public" was apt, since mobilizing for war would involve Canadian society as a whole, and the armed services' medical branches would rely heavily on civilian agencies for some of the preparation for a general conflict. Thus, "It has been decided that the Armed Services will utilize the blood transfusion service of the Canadian Red Cross Society in the event of war," the ISMC reported in September 1950. By authority of the Deputy Minister,

> The Canadian Red Cross will supply to the Armed Services sufficient blood and blood products to meet their needs. The immediate requirement for the Special Force [for Korea], and to allow of some stockpiling, is estimated to be about 1000 bottles per month if purchased from commercial sources. The long term requirement of the Armed Forces in event of full mobilization will probably be about 6000 bottles per month. The facilities of the Canadian Red Cross can be expanded to meet this requirement.[51]

The cost of the initial 1000 bottles per month would be $180,000 if obtained from commercial sources, and though the Red Cross for its part hoped to supply the blood without cost to the government, the expansion of the necessary facilities would cost the civilian agency a half-million dollars:

> It is expected that this amount will be forthcoming from voluntary contributions as a result of a national appeal to be made in March 1951, provided that the needs of the Armed Forces still have publicity value at that time, i.e. that the war situation is still acute. Should the international

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[50] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, MGen W.H.S. Macklin, AG, to Chair PMC, 7 Sep 50.

[51] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, G/C A.A.G. Corbet, Chair ISMC, to Sec PMC, 20 Sep 50.

> situation have eased by that time ... the Red Cross would require to be reimbursed for their outlay.

In effect, as the ISMC reported, the government would be betting the difference between $180,000 and $500,000 "that the international situation will still be tense in March 1951."[52] The Personnel Members Committee agreed to the wager, in spite of a letter from Dr G.D.W. Cameron, the Deputy Minister for National Health, recommending that "rather than agree to underwrite the Canadian Red Cross Society ... there should be a definite contract for the purchase of any necessary blood and blood products." The ISMC argued, however, that the potentially urgent need for blood precluded trying to force the Red Cross into a contractual situation, and the Personnel Members Committee agreed.[53]

Blood had been an issue of major concern since before the Second World War, it having been found that transfusions of the substance could bring about dramatic improvement in people suffering from shock. It was not, however, always available in the amounts required, so substitutes were tested, as was any product that might make existing supplies go further. The war in Korea was the scene of some of this work, No 25 Canadian Field Surgical Team reporting that, in July 1952, Colonel William A. Spacher, Director of the Department of Clinical Research at Brooke Army Hospital, Fort Sam Houston, Texas, and Doctor Curreri, Professor of Surgery at the University of Wisconsin, "were studying the potentialities of Dextran in resuscitation at the 8055 MASH Korea. From the results of their studies it would appear that this substance may prove to be very useful in future resuscitative measures." Though long a part of treatment procedures in Sweden,

> it is only during the past two years that American investigators have been especially interested in its use. Their interest was aroused mainly because of the ever increasing possibility of a large scale war in which case adequate supplies of plasma and whole blood would not be available. This would be especially true of a large number of casualties from Atomic explosion or any disaster causing extensive burns or body trauma. In addition the pooled plasma which is in current useage [sic] has been found to be responsible for homologous jaundice in 5-15 percent of cases. An incidence as high as 20 percent had been reported by some observers.[54]

Dextran was not, in fact, a substitute for blood, but by drawing fluid into the bloodstream it helped tide a patient over until whole blood became available.

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[52] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, G/C A.A.G. Corbet, Chair ISMC, to Sec PMC, 20 Sep 50.

[53] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Extracts from the Minutes of 307th Meeting of Personnel Members Committee, 5 Dec 50.

[54] NA, RG 24, v.18,398, No 25 Cdn Field Surgical Team, Jul 52, Appx 1.

Another substance that would be required in large quantities in case of mobilization was vaccine, and as part of one headquarters exercise called Fallex (not to be confused with the field exercises of that same name later conducted in Europe) the Director of Preventive Medicine and the Director of Medical Supply (or DMed Sup) examined the problem of procuring enough vaccine for such diseases as smallpox, typhus, and cholera:

> In round numbers enough vaccine to immunize 40,000 reserve servicemen and recruits would be required... At the beginning of each fiscal year DMedSup arranges procurement of enough vaccine to immunize all regular force personnel during the current fiscal year, plus 10% to ensure supplies for the early part of the following fiscal year.

There would thus be none available for any reservist personnel that might be called up: "The main stumbling block to prompt procurement of extra vaccines is TABTD," a cocktail to protect against a variety of diseases; it was "manufactured in Canada by one laboratory only which keeps no stock in hand and produces at one time only that amount of TABTD which has actually been requisitioned by the Armed Forces. Lead time for production and delivery is 90 days: if another 30 days are allowed for distribution to units and other contingencies the total lead time is 120 days,"[55] or almost four months. In case of quick mobilization, many recruits might just have to do without.

Medical intelligence might help determine how to prevent disease, and gathering supplies might ensure treatment was available for sick and wounded soldiers (though there were no guarantees), but that left the issue of moving patients to where they could receive effective care, and if arrangements were not made in peacetime they might not be available should war break out. Thus, when in April 1950 the ISMC asked what kind of air ambulance service would be available upon mobilization, since it "will have a direct bearing on the Army's medical mobilization planning,"[56] the response must have come as something of a shock. "No plans exist which involve the RCAF in an air ambulance role," Air-Vice Marshal F.R. Milller replied. "While a few Dakota aircraft are capable of carrying stretchers, RCAF mob[ilization] plans call for the use of total airlift ability on urgent military projects and their logistic support... The RCAF will be unable to guarantee any air ambulance services to the Army, from our present resources."[57]

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[55] NA, RG 24, 83-84/167, Box 7826, 2-6100-33/47, Col R.D. Barron, DPMed, to DMedPR, 14 Sep 62.

[56] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, A/C F.G. Wait for AMP, to AMOT, 27 Apr 51.

[57] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, AVM F.R. Miller, AMOT, to AMP, 10 May 51.

The air force clearly felt the army was making demands it could not fulfill, but Major-General W.H.S. Macklin, the Adjutant-General, pointed out to the Chief of the General Staff, and the Inter-Service Medical Committee agreed, "that unless the RCAF organize and provide an air ambulance service on mobilization it will be necessary for the Medical Services to be prepared to operate at a very large number of scattered Army, Air Force and Naval stations across Canada..." to ensure that medical practitioners were near their patients. Macklin noted that "Given an efficient air ambulance service, the necessary surgical centres can be consolidated,"[58] patients being brought to the surgeons. Each fighting branch was, however, a law onto itself at the time, and the best Lieutenant-General G.G. Simonds, the Chief of the General Staff, could do was to suggest that an air ambulance service "should be feasible by requisitioning of civilian air transport and crews, providing steps to organize such a service are undertaken beforehand."[59]

Such issues, in all their myriad details, were discussed at length in dozens of committees so that policy-makers at the highest levels of government and the Department of National Defence could formulate some form of plan. One such committee was made up of G.E. Hall of the University of Western Ontario, J.A. MacFarlane of the University of Toronto, W.C. Mackenzie of the University of Alberta, and Mathieu Samson of the Université Laval, all of whom had previous military experience covering all three services. In their view, the mobilization problem was that

> One of Canada's great responsibilities at this time is the preparation for the total defence of its people and its ideals and the implementation of its international commitments through whatever organizations and means Parliament may from time to time decide. The role of the Armed Forces as a peace-time nucleus of the vast technical and manpower potential of war therefore, assumes critical significance. The effectiveness of the Armed Forces, dependent as it is upon training, discipline and morale, can be seriously impaired unless the health of the members of the forces, mental and physical, is maintained at a high standard. And so too is the efficiency and the morale of the civilian population, including those who will continue to develop our resources, those who will produce our food-stuffs, and those who will manufacture our tools of war, dependent in large measure on the knowledge that immediate and adequate medical services will be available to them in time of need.[60]

[58] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, MGen W.H.S. Macklin, AG, to CGS, 17 May 51

[59] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 3, LGen G.G. Simonds, CGS, to Chair Chiefs of Staff, 28 May 51

[60] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, A Report of the Committee on Integration of the Medical Services of the Three Armed Forces as Established by the Chairman of the Defence Medical and Dental Services Advisory Board, Apr 52

Therefore, the committee noted,

> Planning for the greatest possible utilization of medical facilities and medical and nursing manpower in order to assure the optimal services to the members of the fighting forces as well as coverage for the civilian population is in keeping with the increased tempo of national preparedness. In the event of a major war no longer will only the Armed Forces be exposed to injury and death at the hands of the enemy. Thus ... it is necessary to think and plan in terms of a military disaster service for the civilian population. Greater flexibility in our thinking and the acceptance of a national concept in our planning will be necessary to effect a practical medical and nursing man-power utilization programme within the Armed Forces, both in time of peace and in the event of war.

Hall and his colleagues suggested that policy-makers look to the Second World War for lessons learned, since "Duplication of hospitals, duplication of hospital staffs, duplication of consultants and long periods of professional idleness fostering, as they did, frustration and discontent, drew away from the civilian population large numbers of doctors and nurses long before they were actually required, to the detriment of the physicians, surgeons and nurses concerned as well as the civilian areas which they had, in their enthusiasm, been permitted to leave."[61]

Lack of planning thus led to confusion and waste, but preparing for war—and other catastrophes—was not just a DND responsibility; other departments, such as Health and Welfare, were also involved, requiring liaison that added yet more complexity to what was already a complicated process. Hurricane Hazel having struck parts of central Canada in 1954, post-disaster discussions brought the reminder that "civil defence is not named as a responsibility of the Department of National Defence." There existed, however, a Defence Medical and Dental Services Advisory Board, which was not only responsible to the Minister of National Defence in regards to recruiting medical officers, but also to Health and Welfare in determining requirements to meet civilian disaster.[62] Also, in case of a more warlike event, such as a "megaton weapon attack," stockpiling and warehousing medical items was a joint responsibility DND shared with Health and Welfare.[63]

Issues of organization and education, and liaison at high levels between both departments, were thus becoming a matter of routine by the mid-1950s. For example, in July 1955 the Principal Medical Officer for Civil Defence Health Services at Health and Welfare, K.D. Charron, contacted Brigadier J.N.B. Crawford of the Canadian Forces Medical Council for advice on the composition of specialized teams for post-disaster health care, including "neuro-surgical, maxilla-facial, ophthalmic, etc." He wanted DND input on "the composition of the team, numbers of units needed, equipment and its availability, and so forth." Another issue was the integration of principles of mass casualty care into undergraduate curricula for medical students, with DND providing information that could be used at a meeting of the Association of Canadian Medical Colleges.[64] Such liaison work also included military participation at Health and Welfare-sponsored conferences, the participation of DND hospitals in civilian-organized disaster exercises, and the provision of warehousing space at RCAF facilities for emergency medical supplies and equipment.[65]

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[61] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, A Report of the Committee on Integration of the Medical Services of the Three Armed Forces as Established by the Chairman of the Defence Medical and Dental Services Advisory Board, Apr 52.

[62] NA, RG 24, Acc 83-84/167, Box 7823, Relationship of Medical Services of Armed Forces to Civil Defence, nd.

[63] NA, RG 24, Acc 83-84/167, Box 7823, BGen J.N. Crawford, Exec Staff O CF Med Council, to Chair COS, 18 Jan 55.

The future was not sufficiently predictable to make mobilization anything more than educated guesswork, but by the early 1960s the Canadian Forces Medical Service nevertheless had a fairly detailed idea of how it would respond should war break out. Actually, the plural "wars" would be more accurate, since the CMFS envisaged two kinds of conflict: first, "Plan Red. Canada is subjected to nuclear attack immediately on, or shortly after, the outbreak of hostilities. National survival then comes foremost"; second, "Plan Green. Canada is involved in a general war, but North America has NOT been subjected to nuclear attack, nor has general use of large range-high yield nuclear weapons occurred elsewhere. The threat of nuclear attack on Canada remains." Obviously, Plan Green could quickly turn to Plan Red, but in either case the general outline of how the CFMS would react remained the same. The Surgeon General, now the head of a unified medical service, would retain under personal command the CFMS Training Centre and No 1 Central Medical Equipment Depot, so as to allocate personnel and resources as the situation required. To do so he might join the alternate DND Headquarters, to be located at some distance from potential nuclear targets such as Ottawa.[66]

Further down the chain of command, "The appropriate regional surgeon will provide medical support for units or troops engaged in defence of Canada operations or duties," while permanent force medical units available would include 3 Field Ambulance and 1 Airborne Medical Section in Calgary, 2 Airborne Medical Section in Borden, and 3 Airborne Medical Section in Valcartier. Reserve units that could be called upon were 5 Medical Company in Charlottetown, 13 Medical Company in Owen Sound, and 24 Medical Company in Vancouver, all of which would concentrate at war stations selected by the General Officers Commanding area commands. One possible role for these units was National Survival, the clean-up following nuclear attack, but planning for such operations was tinged with something other than optimism. The defence plan noted that "Adequate accommodation for second echelon medical care will generally not be available on the outskirts of target cities"; "Sufficient CFMS personnel to do the initial sorting at rescue sites will not be available"; and that "Sufficient medical personnel, Service or civilian, to permit off-loading and resuscitation of all casualties en route to civilian reception hospitals will not be available," although "Enough civilian transport exists to move all patients from rescue sites to civilian hospitals, provided the transport is organized and controlled." The plan also assumed that "The Service responsibility in national survival is first aid at the rescue site." That role, however, could quickly expand given the demands of the situation, so the CFMS had to be prepared to give advice on evacuation and on rescue sorting, and to "Sort out serious patients and give them sustaining care until turned over to provincial medical care." Furthermore, "in locations where civilian facilities are inadequate but static CFMS facilities exist," it was to "provide temporary medical care pending provision of civilian care."[67]

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[64] NA, RG 24, Acc 83-84/167, Box 7823, K.D. Charron, PMO Civil Defence Health Services DHW, to BGen J.N.B. Crawford, CF Med Council, 7 Jul 55.

[65] NA, RG 24, Acc 83-84/167, Box 7823, MGen K.A. Hunter, SG, to E.J. Young, Civil Defence Health Services DHW, 19 Oct 59; G.D.W. Cameron, DM National Health, to SG, 23 Jan 61; G.D.W. Cameron, DM National Health, to G.G.E. Steele, Sec Treasury Board, 3 Oct 62.

[66] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, The Canadian Forces Medical Service, Emergency Defence Plan, 1 Mar 63.

The Emergency Defence Plan detailed a litany of possible disaster scenarios: "The CFMS must be prepared to do without DVA facilities because of their probable subjection to destruction or fallout," and "CFMS facilities may be asked to accept casualties from the Atlantic seaboard because of fallout over US seaports." Less disastrous, "The Department of National Health and Welfare may ask DND to accept civilian casualties in CFMS facilities following nuclear attack on Canada. Should such a commitment be accepted, it is assumed that DNH&W would be responsible for provision of the medical staff and materiel in excess of what is now available in DND."

Finally, the plan noted, "Under disaster conditions, Service dependants may require medical care, including maternity care, in areas such as Camp Borden where they do not now get Service care. They may require definitive care in those areas such as radar sites where they now receive out-patient care." It was all rather overwhelming, although one note of optimism was struck in listing fifteen facilities expected to be outside probable target areas, patients able to expect medical attention at Comox, Chilliwack, Wainwright, Penhold, Shilo, Clinton, Borden, Petawawa, Trenton, Kingston, St Jean, Valcartier, Gagetown, Summerside, and Cornwallis, each of which had clinics with from 10 to 125 beds, for a total of 725 beds; this number could be expanded to 1325.[68] Still, the resources available strike this author as being very little given the challenge.

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[67] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, The Canadian Forces Medical Service, Emergency Defence Plan, 1 Mar 63.

Nor were such plans quietly accepted by all those who would have to implement them. Colonel M. Fitch, the Regional Surgeon in Alberta, insisted that "Detailed planning should be done at the Regional level rather than centrally. No amount of data processing or even visits by officers from NDHQ can substitute for the intimate knowledge of local conditions which the Regional Surgeon acquires in his day-to-day duties... Regional Surgeons should either be given full authority over all CFMS members in their region or the idea of regionalization should be abandoned. At the moment the authority of Regional Surgeons varies according to which Region they are in and what their own parent service is. As matters now stand, in any emergency, each of the three services would have to take back control of its own medical component. All peacetime methods of supervision would fall apart through lack of authority on the part of the Regional Surgeon. Since the main function of the peacetime service is to prepare for war we are faced with a true paradox."[69]

The Regional Surgeon Pacific echoed the views of his colleague, suggesting that "a more realistic approach to the problem could have been made if each Regional Surgeon had been asked to submit an emergency defence plan for his particular region and then have the various plans welded into a harmonious whole by the staff of the Surgeon General." In his case, the plan seemed to take no cognizance of British Columbia's topography, but worse, in his eyes, it "pays only lip service to the Canadian Forces Medical Service and is primarily a plan for the disposition and deployment of the old Royal Canadian Army Medical Corps, using establishment and complements which have been abandoned in this Region for the past two years." He also noted that 95 per cent of all the reserve medical strength in the province was in or near Vancouver or Victoria, both expected to be targets for nuclear weapons.[70] Three years later, in 1966, Surgeon Captain J.W. Rogers, the Regional Surgeon

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[68] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, The Canadian Forces Medical Service, Emergency Defence Plan, 1 Mar 63.

[69] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, Col M. Fitch, Regional Surg Alberta Med Region, to SG, 7 Jun 63.

[70] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, Regional Surg Pacific Med Region to SG, nd.

Pacific, noted that the defence plan as it then stood called for evacuating Canadian Forces Hospital Esquimalt to Comox, and he pointed out that the latter was now deemed to be a primary target for a nuclear strike (it had been deemed safe in 1963). He suggested a solution: "It is understood that the Nanaimo Indian Hospital, which is listed as 100 beds, is about to be vacated by the Department of National Health and Welfare and turned over to the Department of National Defence," thus creating a useable alternative to Comox.[71]

Canada's forces in Europe and the RCN in the North Atlantic had to deal with a similar mountain of detail while integrating their plans with those of NATO allies. In March 1963, as we have seen in reference to home defence, the CFMS issued its Emergency Defence Plan, although the only comment made in relation to 1 Air Division in Europe was that "Existing medical arrangements will remain in effect." For the RCN, the plan noted,

> Personnel shall be immediately available to bring the medical component of all ships up to operational complement in emergency... A six month reserve of medical materiel for all ships shall be maintained where it will be readily available in emergency... Arrangements shall be made for prompt and adequate medical support of RCN operations, and for the reception and disposition of all casualties brought ashore. Where necessary, in conjunction with local civilian medical authorities, medical facilities additional to those to be expanded ... will be arranged.[72]

In Europe, as in Korea, the backbone of army medical service operations was expected to be the field ambulance, No 27 being authorized on 5 May 1951, recruiting lasting into July and beyond. Later, in September, the unit was redesignated 79 Field Ambulance, its role to support what eventually became the 4th Canadian Infantry Brigade Group, or 4 CIBG.[73] As late as 1963, however, casualty estimates in the European theatre were "based primarily on World War II rates established by the British," and whether these took into account the reinforcement crisis of late 1944, when those rates were found to be wildly inaccurate, is somewhat doubtful. However, since the army in Europe would be deployed on British lines of communications, the CFMS commitment was limited to "Full medical services within 1 Canadian Infantry Division," "Provision of hospital beds for a division of three infantry brigade groups," "Evacuation of patients from the battlefield to Canadian general

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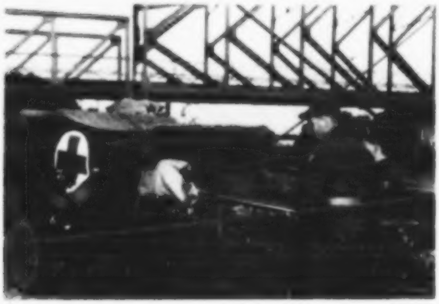
[71] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, Surg Capt J W Rogers, Reg Surg Pacific, to SG, 13 Oct 66.

[72] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, The Canadian Forces Medical Service, Emergency Defence Plan, 1 Mar 63.

[73] NA, RG 24, v 18,389, 27 Cdn Fd Amb, 5 May 51, Jul 51, Apps 29; 79 Cdn Fd Amb, Sep 51, Appx 1.



The Field Ambulance in Germany during Exercise Spearhead II, August 1952. National Archives of Canada, PA 140127.

hospitals," and "Distribution to Canadian Forces of medical supplies." Accompanying such straightforward preparations, however, was the grim prediction that "The Canadian force will number about 28,000, of whom 24 per cent living casualties," or 6,720, according to an estimate by the Canadian Army Operational Research Establishment (CAORE) "can be expected during its fighting life. There will be no evacuation from the theatre in the first 30 days... Of the 6,720 casualties, 20 per cent will be minimal cases who can be treated and returned to duty; 20 per cent will be accommodated in reinforcement camps set up by CANLOG [a Canadian logistics organization]; and 10 per cent will be expectant cases unlikely to reach hospital level." That left about 3,400 patients requiring hospitalization, though not all at once, hence the need for an 1,800-bed hospital.[74]

In June, however, Headquarters of the Allied Forces Central Europe (AFCE) provided somewhat different guidance:

> In the event of a nuclear war not involving the use of nuclear weapons by the enemy for "terror" purposes, the land forces in the Combat Zone may suffer casualties amounting to 30 to 35% of their strength during the enemy's initial nuclear effort, which may occur within a very short period. The trend of casualties for the following days cannot be forecast ... All that can be expected is that the rate will drop rapidly, although the overall casualties may amount to 50% within a period of ten to fifteen days.

As for conventional fighting, it was expected that a first phase of combat would cause 10 per cent casualties over fifteen days, followed by a second, similar period inflicting another 6 per cent. A CAORE study, quoted in the AFCE paper, proposed that

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[74] NA, RG 24, 83-84/167, Box 7826, 2-6110-3, The Canadian Forces Medical Service, Emergency Defence Plan, 1 Mar 63.

> the average casualty level that may be reached in a matter of some 30 hours in the context of a defensive nuclear battle in NW Europe will be approximately 25% nuclear and 6% conventional. Of the nuclear casualties, 70% will ultimately die, with 40% of the deaths occurring within six hours or so of being affected.

Adding up the various figures and weighing them against each other provided a number of hospital beds required for Canadian ground forces of 900 to 1,000,[75] somewhat less than the CFMS estimate of 1,800.

Yet another source of information, however, was Supreme Headquarters Allied Powers Europe (SHAPE), which provided planning estimates for the first 30 days of a general conflict, of which the first 15 would involve the use of nuclear weapons.

> An informal medical appreciation of the implications of these casualty estimates in relation to 4 CIBG suggests that the 4 CIBG F[iel]d Amb[ulance] together with 1 Cdn Gen Hosp could provide reasonable care under such emergency conditions, provided we can count on the use of Brit CCS and MAC facilities,

that is, casualty clearing stations and motorized ambulance columns. Also, the brigade counted on "two rather than one Cdn Fd Surgical Teams" being provided. However, even though "agreement with the proposed NATO casualty rate estimates is recommended," SHAPE also required "recognition that we may not be able to deal adequately with the situation if it arises."[76]

Meanwhile, US sources suggested rates that, for the Canadian Brigade, translated into 400 or more losses from a five-day battle, "provided that the divisional medical resources and rearward support have the flexibility to cope with peak periods." Without evacuation, however, patients suffering from disease would accumulate to about 230, meaning that an average of 200 beds would be needed within 6-8 hours' travel time from the battlefield, for the wounded, with another 120 beds available in support: "Assuming that the majority of the accumulated non-battle casualties could be evacuated before the battle, and that help from the rear will be available for peak demands, adequate medical support for a division capable of initial independent function and of fighting at any considerable distance ahead of its base must include some 300 beds and surgical capacity of 40 major operations per day... To give brigades adequate medical support of independent operations, the field hospital must be capable of splitting into 100 bed sub-units. In addition each brigade needs a clearing section and four ambulance sections."[77] Given such a challenge, the admonition that "Medicals must take care not to overstrain the logistic" system was more than likely to fall on deaf ears. In fact, a member of the Surgeon General's staff wrote in the margin of the paper in which the recommendation appeared that "This may be absurd to stress because it may render the meds ineffective."[78]

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[75] NA, RG 24, 83-84/167, Box 7827, 2-6110-6, Extract from HQTS 2-6035-1/3 (DSG (A)), 21 Jun 63.

[76] NA, RG 24, 83-84/167, Box 7827, 2-6110-6, Brig P.S. Cooper, for AG, to DGPO, 25 Jun 63.

The RCAF also had an important presence in Europe, and although as we have seen it was barely mentioned in the 1963 planning papers, this was rectified in the years that followed. In October 1966, for example, Group Captain I.H. Barclay, the Regional Surgeon overseas, reported that it had been decided that, on a request being forwarded through 4 Allied Tactical Air Force, "German Central Area will arrange sites for deployment of our field hospitals." As well, it was estimated that

> The Germans have 82,000 reserve hospital beds which will operate at D plus 6," or six days after the outbreak of war, designated D-Day: "We will get maps ... of German civilian hospitals, [which] will show us where we can go behind our emergency hospitals... We visited the supply depot at St Ingbert where the material for a Hospital Regiment is stored and also for five hospital trains... This is the first positive approach made on this subject to the Germans by 1 Air Division,"[79]

about fifteen years after the RCAF's deployment to NATO airfields.

Coordination with other members of the North Atlantic Treaty Organization operated at several levels. Something as simple as terminology could require the attention of the Personnel Members Committee, one meeting in 1953 deciding to ask the ISMC to use such expressions as "dispensary," "infirmary," and "hospital' to bring the Canadian medical branches into line with NATO forms of administration.[80] At a different level of medical operations, General Alfred M. Gruenther, the US Army Chief of Staff, distributed a paper in 1953 to the effect that "SHAPE is greatly concerned with the present lack of a coordinated NATO defense against epidemic disease and the establishment of remedial measures is regarded as urgent." Whether occurring as a natural epidemic or as an outbreak artificially produced by the enemy, "the protection of NATO forces is a military problem. This problem can be solved, however, by the coordinated effort covering the entire area of Allied Command Europe, and requiring the co-operation of the civil authorities." In order to provide an effective defence, Gruenther proposed the establishment

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77. NA, RG 24, 83-84/167, Box 7827, 2-6110-6, G/C W J F Young, for SG, to D Org, 21 Oct 63.
78. NA, RG 24, Acc 83-84/167, Box 7825, 2-6110-034/336, LCol W A Reed, for Army Member Cdn Joint Staff London, to SG, 31 Mar 60.
79. NA, RG 24, 83-84/167, Box 7826, 2-6110-3, G/C I H Barclay, Reg Surg, to Air Div, 11 Oct 66.
80. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Extract from the Minutes of the 447th Meeting of the Personnel Members Committee, 17 Dec 53.

of "a system of rapid identification and reporting by which each major outbreak of disease can be speedily investigated and the causative organism identified." Planning would involve "the selection of a suitable research centre in each country, the recruitment of a team of investigators from each centre and provisions for transporting them by air or fastest means to the scene of any major disease outbreak. In co-operation with the local authorities this team would collect specimens necessary for a diagnosis and return to their laboratory to complete their studies. Their findings would be immediately communicated to their Public Health and National Defense Authorities and thence to SHAPE."[81] It was all grist for the mill.

Within Canada, general guidance for military medical operations came from the Medical Joint Training Centre, which issued its first "Gen" or General Instruction, in 1957, providing an excellent snapshot of the CFMS's role in the peak period of the Cold War: "Military Medicine was once defined as 'the application of sound medical principles to the prevention and management of injuries and disease under the conditions imposed by war.' Every military commander from Moses to Montgomery appreciated that in order to retain sufficient manpower to complete his military task he must keep his men healthy and fit. However, the above-stated definition is no longer correct and must now include "peace" as well as "war"." Before the Second World War, peacetime military medicine had, in effect, been civilian medicine. After the war, however,

> military medical requirements in aid of the Civil Authority, plus the ever-increasing requirements of medical support to Canada's contribution to international commitments have greatly broadened the aspect of military medicine in peacetime. The service medical officer must be prepared to provide medical care to Canada's Armed Forces anywhere in the world and the speed of modern travel has greatly increased the number of disease entities...[82]

Furthermore, although fatalities within hospitals had declined from 20 per cent in the Crimean War to 10-12 per cent in the Second World War and 2-4 per cent in Korea, still,

> too many deaths do occur before hospitals are reached and this remains a problem. There has been a fairly constant ratio in the battle of—one killed in action to three wounded. The "killed in action" includes immediate deaths and those that die before reaching medical installations. Many of these latter cases might have been saved by more effective first aid and

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[81] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Gen Alfred M. Gruenther, US Army, Chief of Staff, to Distribution, 5 May 53.

[82] NA, MG 31, J7, v.2, Military Medicine, Medical Joint Training Centre, Gen 1, 23 Oct 57.

> evacuation facilities. Marked changes in the methods of waging war have created more complex problems, which require development of new approaches to these problems. It has been estimated in a future war that 70% of casualties due to atomic weapons will be extremity wounds and thermal burns. To this must be added the ever-constant threat of radiation effects.[83]

The obvious conclusion was that the time to prepare for war was while the country was at peace.

The aim of such planning was to defend a liberal democracy, but that meant not only that medical practitioners would treat military, naval, and air personnel; they also, to some extent, had to take into account the civil rights of their patients. As Group Captain H.A. McLearn, the Deputy Judge Advocate General, related in 1954, "A situation has recently been brought to my attention wherein the commanding officer of an RCAF unit made a request to be shown the medical documents of an airman under his command. The medical officer of the unit refused to comply with this request, whereupon the commanding officer referred the matter to the air officer commanding." Under Queen's Regulations (Air), article 34.01, the prime responsibility of a Medical Officer was to act as a staff officer to his commander: "As a result, the acts of a medical officer, when acting within the scope of his employment and duty, become the acts of his commanding officer, it is only right therefore that a commanding officer should be permitted to see the medical documents of all officers and men under his command." Naturally, McLearn added, "In view of the confidential nature of medical documents, only authorized persons who are thoroughly aware of this should have access to them. The passing of these documents should always be done under confidential cover."[84]

Still, in McLean's opinion, "if the medical officer concerned in the situation above had been aware of his relationship in regard to his commanding officer, the difficulty would never have arisen. On the other hand, there may be cases where the medical officer does decide that a certain medical document should be withheld. Should this case arise, I think that a commanding officer should consider seriously whether he ought to order the medical officer to produce the document. If the medical officer indicates that he has a strong reason in a particular case for withholding the information from his commanding officer, the commanding officer would be well advised to consult higher authority."[85]

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83. NA, MG 31, J7, v.2, Military Medicine, Medical Joint Training Centre, Gen 1, 23 Oct 57.
84. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, G/C H.A. McLearn, Dy JAG, to DMS (Air), 30 Apr 54.
85. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, G/C H.A. McLearn, Dy JAG, to DMS (Air), 30 Apr 54.

Thus the RCAF, at least to a point, had to compromise with civilian medical principles. The ISMC, made up exclusively of uniformed doctors, agreed that such should be the case, concluding that "such procedure strikes at the very basis of the doctor-patient relationship and would result in a loss of confidence on the part of the patient." It suggested that a commanding officer only have access to a summary of a patient's condition, the issue being referred to higher medical authority if he was not satisfied with the report his medical officer provided.[86] The Personnel Members Committee, in a rare action, disagreed, insisting that "the authority of commanding officers must be preserved."[87] In regards to dependents' medical documents, however, the PMC agreed with the ISMC that a summary from the medical officer was all a commanding officer could insist upon.[88]

The diverse issues discussed so far in this chapter: mobilization, intelligence, ethics, and operations (both military and medical) were obviously complex, and the organization that dealt with them, within the medical branches and, after 1959, the medical service, reflected that complexity, though only a few examples can be provided in this study. Aside from the Inter-Service Medical Committee and Personnel Members Committee within National Defence Headquarters, the Canadian Forces Medical Council was formed in 1953 to advise the minister on all aspects of medical policy.[89] By 1966 the chain of command ran through the Surgeon General to the Chief of Personnel to the Chief of the Defence Staff to the Defence Council; the Surgeon General also had lateral communications with other Branch Chiefs, such as the Chief of Technical Services and the Comptroller General.[90]

Outside headquarters proper were liaison officers in such foreign capitals as London and Washington, DC, and a good example of the kind of work these people performed was a report from Lieutenant-Colonel A.M. Davidson of January 1963, subdivided into such headings as "Progress in Combat Development," "Training," "Materiel Standardization," and "Other Items of Interest," with forty topics in all.[91] These officers often dealt with requests for intelligence from headquarters, such as one from the Institute for Aviation Medicine (or IAM) for

[86] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, Brig K.A. Hunter, Chair ISMC, to PMC, 19 Jul 54.

[87] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, Extracts from the Minutes of 474th Meeting of the Personnel Members Ctee.

[88] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Extract from the Minutes of the 538th Meeting of the Personnel Members Committee, 1 Dec 55.

[89] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, AVM F.G. Wait, Chair PMC, to Chair Cdn Joint Staff (London), 30 Jul 53.

[90] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 30th Meeting CFMC, 20 Jan 66.

[91] NA, RG 24, v 20,875, CSC 9-11, LCol A.M. Davidson, Cdn Liaison Officer, to Distribution, 25 Jan 63.

"information on the organic compound known as Isopropyl Nitrate, the breakdown products under various thermal conditions, the heat release or uptake during such reactions, its known reactivity and reaction products with other organic or inorganic compounds." In return, Davidson passed on requests from the US, including one from the United States Air Force "for loan of the IAM quick donning oxygen mask and the infant flotation device. These items had been seen by USAF observers who attended the Ad Hoc Committee on Aircrew Equipment meeting in Toronto and the loan was requested for purposes of study and evaluation."[92]

To organizational matters (international) could be added organizational matters (local), which in the military context meant dealing with individual units. Thus, in 1960, Lieutenant-Colonel M. Fitch, the Medical Officer for Quebec Command, announced that

> Recent discussions concerning the participation of 3 AB Med Sec [Airborne Medical Section] in Defence of Canada exercises have emphasized the need for re-evaluation of the organization, training and employment of this unit... It is pointed out that, as of 30 Nov 60, the unit has no medical officer, is at 56% of its authorized strength, and has no official equipment table. Its training is severely limited by these deficiencies.[93]

Its problems were not unique, Brigadier G.L. Morgan-Smith, Deputy Surgeon General, explaining that "In the reorganization of the airborne elements of the Canadian Army some three or four years ago the then existing airborne medical platoon was broken down into three sections. Unlike the infantry where one company of the battalion was trained in the parachute role these sections were constituted as individual units." They obviously had not thrived as such, since

> It is the Surgeon General's proposal to recommend disbandment of the airborne sections with the manpower to be incorporated into each of the field ambulances to which they are attached. One section will be designated as a parachute section in a similar fashion to the infantry companies in the three infantry battalions.[94]

If dividing up medical groupings failed as an organizational experiment, integrating them into larger units sometimes fared no better. In 1964, an Experimental Brigade Service Battalion (or EBS Bn) was formed to look into the possibility of increasing efficiency by centralizing certain administrative and logistical elements. The result, of course, was

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92. NA, RG 24, v.20,875, CSC 9-11, Brig R.L. Purves, for Chair COS, to Distribution, 21 Oct 63.
93. NA, RG 24, Acc 83-84/167, Box 7825, pt 1, 6100-1, LCol M. Fitch, Quebec Command MO, to SG, 19 Dec 60.
94. NA, RG 24, 83-84/167, Box 7825, 6100-1, pt 1, Brig G.L. Morgan-Smith, Dr SG (Adm), to DMO&P, 14 Mar 61.

that the integrated medical unit lost control over such things as clerks and vehicles, and an overall increase in efficiency failed to make up for such losses. The battalion, therefore,

> was incapable of holding and treating casualties, even at the low rate of production of casualties experienced during the Trials. Unless we are prepared to accept a higher mortality rate and very low standards of medical care, the organization was inadequate in personnel, equipment and vehicles.

The resulting inefficiencies bordered on the ridiculous; for example, "The operational siting of ambulance and clearing stations does not always fit into the areas allotted to or by the EBS Bn." Similarly, "Due to the fact that the ambulance and clearing sections are totally dependent on the EBS Bn administrative setup, they have lost their flexibility, and thus are not capable of independent operation." Brigadier J.S. McCannel, the Deputy Surgeon General (Administration), thus recommended that medical support be provided by an independent unit.[95] Both the Surgeon General and the Director-General Personnel Plans agreed.

We cannot, of course, discuss issues of organization without examining the institution of the hospital, which in the postwar period became the main focus for health care in the industrialized world. Given personnel shortages, however, and a policy that sought to ensure, after the formation of a single medical service, that none of the three armed forces dominated in any of the hospitals deemed to be "tri-service," organizing practitioners for these facilities could be problematic. As Brigadier K.A. Hunter, chairman of the Joint Services Medical Board (or JSMB), explained in 1958, when it came to posting nursing sisters, "Consideration was given to keeping movement of personnel at the minimum consistent with professional training and establishment vacancy."[96]

Maintaining a hospital's tri-service character, however, required no little effort, and "it was agreed by JSMB that to further the tri-servicing concept each hospital should have six of the junior nursing sister positions filled by members of the other two Services on the basis of 3 from each. (e.g. DND Hospital, Rockliffe, would have on its establishment three Army and three Navy nursing officer positions in the rank of F/O [Flying Officer] or equivalent.)" Each branch of the service would provide "six nursing sisters of F/O equivalent rank for cross-servicing in the three tri-Service hospitals."[97] When it came to tradespeople, it was decided that about 10 per cent of their positions should be filled by cross-posting, the Joint Services Medical Board insisting that "every effort shall be made to keep each hospital fully and properly manned." That being said, "Each service shall be responsible for the manning of one DND hospital as follows': the RCN in Halifax, the Army in Kingston, and the RCAF at Rockliffe."[98]

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[95] NA, RG 24, 83-84/167, Box 7825, 6100-1, pt 1, Brig J.S. McCannel, DSG(A), to DGOR, 13 Nov 64.

[96] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 11, Brig K.A. Hunter, Chair JSMB, to Sec PMC, 7 Mar 58.

[97] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 11, Brig K.A. Hunter, Chair JSMB, to Sec PMC, 7 Mar 58.

Making these institutions physically adequate to the treatment and educational tasks they were supposed to perform was a challenge in itself. In 1960, for example, the Surgeon General noted that he and his staff were

> deeply concerned about lack of progress in hospital construction, particularly at such points as Gagetown, Valcartier, Petawawa, Churchill, and the renovation of Canadian Forces Hospital, Halifax. The hospitals at Valcartier and Petawawa are in particularly deplorable condition, being housed in wartime temporary huts in a poor state of repair. In the past two years, all attempts to obtain funds for hospital construction have not got beyond Hospital Requirements Committee level.

The Canadian Forces Medical Council (or CFMC), in turn, expressed "grave concern," noting that

> the Department of National Defence is spending large sums in construction of barracks, married quarters and administrative buildings at defence installations and [the CFMC] fails to understand the attitude within the department which permits the care of the sick to be carried on in temporary wartime huts not originally intended for hospital use."[99]

One small step towards a solution was to replace the Hospital Requirements Committee, which had adjudicated conflicts arising between the three services in regards to hospital construction, with a Construction Review Committee, whose mandate would be to oversee hospital construction as a whole. In late 1961 it had nine projects to supervise, one of them Goose Bay Hospital, which "presents a problem as the civilian population has requested permission to use the hospital. It is possible that the Newfoundland Government, in conjunction with the Grenfell Mission, may construct a hospital in Happy Valley," hence taking the pressure off National Defence. Another problem was in Halifax, where "A requirement for renovations and alterations has been refused repeatedly," although it seemed that the agencies responsible were "going to reconsider." Gagetown offered more room for optimism, since "A submission is in the process of preparation for a proper medical building in this camp," while at Valcartier, "Infirmary and dental clinic accommodation has been approved... Construction is scheduled to commence in 1962." In contrast, the "Montreal Military Hospital ... has been reduced to nil strength. A joint Medical Inspection Room is functioning adjacent to Queen Mary Veterans' Hospital." Other facilities included the Petawawa infirmary, where construction had received the necessary approval, though the Camp Borden infirmary was deferred for a year. As for the Fort Churchill Military Hospital, "This has been a requirement for two years and has now reached a standstill. The Province of Manitoba is reluctant to share the cost. Negotiations are still under way." Finally, the RCN Hospital at HMCS Naden in Esquimalt was evaluated in simple terms: "This building is inadequate."[100]

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[98] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 11, Capt W.A. Walsh, Sec JSMB, to Sec PMC, 7 May 58.

[99] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes 21st Meeting CFMC, 12 Dec 60.

Given such difficulties in regards to the construction or renovation of certain institutions, one possible solution might have been to share facilities with civilian agencies, but such a suggestion was not one the CFMS was willing to greet with open arms. As the Canadian Forces Medical Council explained in 1966, "The training of both individuals and teams of the Canadian Forces Medical Service for an emergency or war, with an immediate reaction time, can be accomplished only by having Service hospitals staffed by military doctors, nurses and technicians. To achieve this, it is essential that the Canadian Forces Medical Service cater to the needs of Service personnel in a military environment in peace." Furthermore, the Council noted,

> it is desirable from the point of view of professional experience, technical knowledge, challenge and variety on the part of CFMS personnel, and for the morale and welfare of the Serviceman, to admit dependants [sic] to Service hospitals and facilities. This is already being done overseas and in isolated areas in Canada; and it is recommended that medical care be extended to dependants in selected areas ... with the proviso that, where dependant care is to be supplied, adequate facilities and sufficient personnel be provided to staff the hospital satisfactorily.

At that time, however, "Neither the physical nor the manpower resources are available to give medical care to all dependents. In some cases the CFMS cannot operate an efficient hospital without the adjunct of a civilian workload in order to justify X-ray, laboratory, etc services; therefore, when it is an advantage to combine with a civilian hospital, it should be effected."[101] Still, the priority was to prepare for war in time of peace while treating armed forces' members, all else being secondary.

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[100] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes 23rd Meeting CFMC, 11 Oct 61.

[101] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 30th Meeting CFMC, 20 Jan 66.

Getting ready for a world conflict was thus no easy task, planning being conducted in parallel with such organizational tasks as the formation of a single Canadian Forces Medical Service. In effect, a period of war/not war forced commanders, policy-makers, and staff officers to think in two different directions at once, an ability that may have been beyond the realm of human capacity. Still, there was no choice in the matter, the country's elected leadership having decided that Canada's place in the world required preparing for the stark eventuality of war with the Soviet Union and its allies and satellites without, however, disrupting the nation's economy. "*C'est la guerre*" is perhaps an inappropriate expression under the circumstances, but "*C'est presque la guerre*" might well capture the spirit of the time.

Chapter Four

Personnel Issues of the Early Cold War

The mobilization described in the previous chapter was obviously incomplete—only a full-scale conflict could bring about a total focus on things warlike—and even in the course of the Second World War, when Canadian society had been centrally organized as never before or since, policy-makers had had to make compromises to ensure they were not bankrupting the nation's future for the needs of the moment. So it was in the Cold War, a circumstance that forced the medical service to think in the long-term when it came to personnel matters, attempting to balance the possibility of war breaking out in the near-future with the need to offer professional medical practitioners no little sense of career satisfaction to encourage them to join the nation's armed services.

We have already seen how in the immediate post-war period doctors were difficult to come by, and that unhappy state of affairs did not change with the Canadian government's increasing perception of an external threat. As Brigadier K.A. Hunter warned the Joint Services Medical Board (or JSMB) in 1958, "The medical officer situation in the Armed Forces has become alarmingly critical. JSMB and CFMC [Canadian Forces Medical Council] studies indicate that action must be taken at once to improve the situation." Two of the Council's members, J.A. MacFarlane, Dean of the Faculty of Medicine of the University of Toronto, and Edward Hall, formerly Dean of the Faculty of Medicine and at the time of Hunter's report President of the University of Western Ontario, pushed strongly for changes: "Both gentlemen stated that the proposed plan is of such nature as to ensure an immediate improvement in the medical student recruitment," since "The attrition in medical officers is exceeding accretion," "Direct entry of Canadian trained doctors has never provided (during 1948-58) a substantial number of medical officers," "Direct entry from the UK has in the past provided a substantial number on a short service basis, but not on a career basis," “The UK supply has shown signs of “drying up,”’ “Dependence on the UK supply is psychologically wrong,” and “The 21-month subsidization plan (in effect since 1952) has ceased to provide the necessary means of replacement for long service and short service attrition.” The latter subsidized the last two years of medical school in return for service in the forces, but it was obviously not having the desired effect. As of August 1958, the RCN had 53 doctors of an establishment of 64, the Army had 192 of 214, and the RCAF had 166 of 192, and those numbers were expected to decline to 51, 159, and 164 respectively.[1]

The Council presented about four pages' worth of proposals, one being “A medical student subsidization plan generally based upon the Regular Officer Training Plan,” which covered the entire period necessary to obtain a degree. Another was to provide “openings for graduate physicians in short service commission status...” The problem with the 21-month subsidization plan was that it was offered too late in a medical student's undergraduate career, that is to say at the beginning of his final academic year: “By this time the medical student can arrange to underwrite by various means the one remaining undergraduate year,” leaving little incentive to turn to the armed services for support. The Council therefore suggested the implementation of a new plan, “Subsidization for three years, nine months, including compulsory internship year, and the full period of two years and nine months ante-dating completion of the academic portion of the undergraduate medical studies.” The plan was proposed in detail: “During the first nine months after enrolment in the plan, the medical student to have the status and pay of an unmarried officer cadet,” and thereafter “the subsidized medical student ... status and pay of an Army 2nd Lieutenant (equivalent).” As for the purely military side of the candidate's education, he would “receive all the necessary military training during the two summer holiday periods preceding completion of his academic studies.” In regards to his subsequent career, the Council recommended “That the subsidized medical student, upon obtaining his licentiate qualification be promoted to the rank of Army Captain (equivalent) and serve for three years thereafter in a provisional Regular commission status,” and “That conversion to permanent commission status be permitted after eighteen months of full-time medical officer duty and that such conversion be subjected to a strict selection procedure controlled by Joint Services Medical Board.”[2]

[1] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, Brig K.A. Hunter, Chair JSMB, to Chair PMC, 20 Aug 58.

[2] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 12, Brig K.A. Hunter, Chair JSMB, to Chair PMC, 20 Aug 58.

The result was what came to be called the 45-month plan, but not all agreed on its potential usefulness. The Chief of the Air Staff, for one, stated at a May 1959 meeting of the Defence Council that "the RCAF does not object to the new scheme but feels that the RCAF would prefer to retain a scheme that was giving the RCAF satisfactory results," though, as we have seen, the air force also faced a shortage of doctors. Nevertheless, the RCAF preferred to rely on its recruiting organization "and on the granting of short-service commissions to medical personnel coming from the United Kingdom. The army and navy place dependence principally on their medical services to find medical personnel to supplement the 21-month scheme." He also disagreed with the proposed rank structure, which he felt was being used more to provide competitive pay than to reflect a medical officer's responsibilities.[3] It was decided to review the scheme.

A possible alternative was to hire civilian doctors under contract, at least for some of the roles filled by medical officers within the armed services. Treasury Board having instructed National Defence to look into the matter in August 1959, Air Vice-Marshal J.G. Kerr, Chairman of the Personnel Members Committee, provided an interim report in October: "Civilian medical practitioners, since the end of the Second World War, have been employed to supplement shortages of Service medical officers and to provide specialist care where there was no Service specialist available," it stated.

> Many civilian doctors are, at present, employed on a part-time basis when insufficient work exists to employ a Service medical officer full-time, or when the volume of work requires extra medical assistance, and also in isolated areas where supplementation is required. Civilian specialists continue to be used wherever it is considered to be in the best interests of patients. The authorized payment is $18.00 a half-day for general practitioners and $36.00 a half-day for specialists.

Although it was possible to obtain civilian practitioners to work part-time in service medical establishments located near large urban centres, "in most instances they will only agree to half-daily employment for a few weeks at a time. Since 77% of Canada's practising physicians earn more than $15,000 a year, and since the more experienced civilian practitioners who would be needed by the Service earn considerably and consistently in excess of this, their availability for full-time employment over long periods of time, e.g. two to three years, is very limited." In consequence, Kerr noted, "the policy of employment of civilian practitioners suggested in the TB [Treasury Board] Minute would result in a very considerable turnover of civilian practitioners and lack of continuity of treatment." It was not a rosy picture, and

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[3] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, Defence Council, Minute of the 93rd Meeting, 11 May 59.

> From the purely Service viewpoint, civilian doctors employed by the Services ... are very difficult to obtain... cannot be moved... refuse variations in type and location of employment... block a rotational scheme of employment and professional training for Service medical officers... cannot be interchanged in employment with Service medical officers, and so are of little value in time of emergency or war.[4]

Still, the armed services required the authority to hire consultants on a case-by-case basis, an excellent example being provided by Dr Bruce Harold Young, whom the Canadian Forces Hospital at Kingston wanted to hire in October 1959. "Dr Young, after having graduated from Queen's University in 1940, enlisted in the Canadian Army Active Force on 24 Jun 41 as a lieutenant and served until 6 Aug 46 at which time he was released having held the rank of lieutenant colonel in the RCAMC," according to a hospital report on his qualifications. "He was apparently regarded at the time as a graded specialist and employed as such from 1944 to 1946." Then, after demobilization, Young "became the Medical Superintendent of the Workmen's Compensation Board and served with the Rehabilitation Centre, Malton, Ontario. He was also a lecturer with the Department of Occupational and Physiotherapy at the University of Toronto." Later, in 1951, he became certified in Physical Medicine and Rehabilitation, and in 1959 was working at the Rehabilitation Centre at Kingston and consulting in Physical Medicine and Rehabilitation at Kingston General Hospital. His military and professional qualifications, as well as his "availability at Kingston," made him attractive as a consultant in Physical Medicine at the Canadian Forces Hospital, Kingston.[5] There is no record of any objection.

As noted in AirVice-Marshal Kerr's report, however, such individuals could only be hired in the short-term and for specific roles. Dr E.H. Bensley's letter of regret to J.A. MacFarlane, the Chairman of the Canadian Forces Medical Council, was thus rather typical. After serving as a nutrition consultant for three years, he wrote,

> I respectfully request that I should not be considered for reappointment. My involvement in nutritional work has gradually diminished over the past years due to my acquiring a number of administrative and other duties. As a result I am finding it increasingly difficult to give detailed professional advice on nutritional matters. For example, last September Air Commodore Corbet asked me for help in the problem of fluid intakes

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[4] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, AVM J.G. Kerr, Chair PMC, to DM, 19 Oct 59

[5] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, LCol for Col J.W.B. Barr, CO CF Hosp Kingston, to Col E.H. Ainslie, Office of the SG, 27 Oct 59.

> for patients. I have no ready answers to his questions and think it unlikely that I will have any opportunity in the foreseeable future to collect the information he requires. I have regarded it as a signal honour to be a member of your Board of Consultants but my situation now is such that I cannot meet the clear obligations of membership.[6]

This writer cannot help wondering if all his colleagues shared the same awareness of their limitations.

For the long-term and general needs of the armed services, then, either the 45-month plan or something very much like it seemed to be the best approach, although the Surgeon-General had to apply all the logic and evidence at his disposal to get his point across to the Personnel Members Committee. One salvo, launched in July 1959, included copies of advertisements that had appeared in *The Canadian Doctor*:

> It will be noted that the Department of Veterans Affairs advertisement for a medical officer for the Treatment Services, Sunnybrook Hospital, states the pay range for this position to be $8,340 to $9,420. For this same type of employment in the Armed Forces an officer of the rank of Surgeon Lieutenant, Captain or Flight Lieutenant would normally be employed, with pay and allowances of $7,140 (married) after three years of service.

For a major or equivalent, the salary was $8,016 per year, rising to $8,376 after three years' service. The Surgeon General added,

> The fact that the Forces are in competition, not only with the income potential of practicing physicians, and physicians employed by industry and Provincial Governments, but the Federal Civil Service as well is highlighted by these advertisements appearing in a medical publication in the same issue... the Forces' medical officer income has fallen behind that available to him in all phases of medical employment.[7]

The response of the Personnel Members Committee was not encouraging, stating that "as heads of personnel branches in their respective Services, they could not treat the Medical Services problem in isolation from the other professional fields."[8] The result was a tirade which, though couched in administrative language, could not have dissimulated the Surgeon General's anger as he pointed out that the Inter-Service Medical Committee had brought up the issue in 1957. At the time the proposed solution, the 45-month plan, "was summarily rejected by PMC," and "In the interim, from 1957 to 1959, no action was taken to correct the disabilities which were apparent. In the meantime the Medical

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[6] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, AVM J.G. Kerr, Chair PMC, to DM, 19 Oct 59

[7] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, MGen K.A. Hunter, SG, to Chair PMC, 17 Jul 59

[8] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, PMC 20 Aug 59

Service, as predicted, has been confronted by an increasing and massive attrition of medical officers." The Surgeon General therefore insisted that "Medical Officers are NOT interchangeable with other officers of the Forces. They do not perform the duties of other officer classifications. Other officers cannot perform the duties of the medical officers." Inevitably, he pointed out, "Failure to maintain an adequate cadre of MOs will result in a total breakdown of medical service." Furthermore, the Surgeon General reminded his audience of "The economic pressures of supply and demand."[9]

It was, then,

> essential that the medical officers pay and allowances be equated in relation to the incomes of physicians in practice, physicians in the Dominion Civil Service and salaried physicians in other civilian employment... Unless the minimal recommendations of our submission are approved in the near future, the continuing attrition through medical officer resignations, will place the Medical Service of the Canadian Forces in serious jeopardy by the late summer of 1960. The Surgeon General's Policy Board cannot accept the responsibility of failing to present this matter most strongly at the highest level.

Nor was the Surgeon General alone in his views, as he had "the complete support of the Canadian Forces Medical Council... Consequent upon our deliberations it is requested that this matter be referred to Defence Council for examination and decision."[10]

He got his way, and in the last months of 1959, of 119 applicants, 50 undergraduates were selected from universities across the country, 10 for the RCN and 20 each for the RCAF and the Army.[11] By May 1961, Minister of Defence D.S. Harkness was advising Treasury Board that 65 enrollments would be necessary in the 1961-62 academic year, 15 for the RCN and 25 each for the RCAF and Army, if the existing medical officer strength was to be maintained. The estimated cost for the 45-month plan, per individual, was $961,590.[12] In October 1961, there were 391 medical officers on strength, while the establishment stood at 461. (Only 14 per cent of Canadian Forces Medical Service MOs were specialists, as opposed to 34 per cent in the civilian world.)[13] One area of adjustment concerned the earliest year in which subsidization could begin, the Canadian Forces Medical Council noting that "The wastage in the first year is high and some students are not sufficiently knowledgeable at the time. The Ontario government has already rejected as impractical a proposal to subsidize from the first year. A similar view is held also by The Association of Canadian Medical Colleges." Subsidization would thus not begin until the second year of medical undergraduate study.[14]

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[9] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, SG, DSG(P), DSG(A), and DSG(P&E), to PMC, 24 Aug 59.

[10] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, SG, DSG(P), DSG(A), and DSG(P&E), to PMC, 24 Aug 59.

[11] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 18, Minister's Tri-service Information Book—1960, The Canadian Forces Medical Service.

[12] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 23, D.S. Harkness, Min ND, to TB, 16 May 61.

[13] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 23rd Meeting CFMC, 11 Oct 61.

It was soon evident, however, that the 45-month plan was insufficient, and at a 1965 meeting of the Canadian Forces Medical Council it was suggested that "times being what they are, the young graduate appeared to be more interested in the immediate rather than the long term benefits; and a bonus payment ... has been found to be a most effective means of recruiting university graduates by some civilian engineering firms." The Council as a whole accepted the proposal, further agreeing to approach Treasury Board for an intake of 75 medical students for the 1965-66 academic year, 10 of whom would be offered a $6,000 bonus for a 3-year short service commission, with a further $4,000 if they accepted a permanent commission after that. The Council agreed that "if neither of these plans met with the desired degree of success, the financial inducements of the present 45-month Plan ... be reviewed in the Fall of 1965."[15]

A year later there was little, if any, improvement; Dr J.D. Hamilton advised the Council that "the present shortage of doctors will grow much more acute within the next ten years and ... the Department of National Defence will experience this problem, as well as civilian communities." The Council continued to plan for personnel shortages. Certainly the raw numbers were not encouraging, one paper noting that,

> of approximately 30 medical officers enrolled in the last 21-month Subsidization Plan in 1958, 19 were released during the summer of 1965; only seven of the total class applied for a permanent commission. Of a total of 41 medical graduates of the 1959 45-month Subsidization Plan only three accepted a permanent commission; out of a quota of 150 medical students for the 45-month Subsidization Plan for 1964 and 1965 only 84 have been recruited... The inability to recruit enough medical students to meet requirements is now being compounded by resignations and requests for early release to a degree that shortly the Canadian Forces will be unable to meet commitments.

Among the recommended cures were quicker promotions at junior levels and paying medical officers the same as in other government departments.[16]

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[14] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 26th Meeting CFMC, 26 Mar 63.
[15] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 29th Meeting CFMC, 3 Mar 65.
[16] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 30th Meeting CFMC, 20 Jan 66.

As the years went by, another alternative to see the light of day was the Military Medicine Training Plan, which

> provides the opportunity for up to five years' subsidization of medical training for Regular Force officers who have had a minimum of at least two years' operational or field experience. The long term aim is to produce specialists in military medicine to replace the diminishing supply of CFMS medical officers who had operational experience in the Second World War or the Korean War. At present there are 14 Regular Force officers undergoing medical undergraduate training under the Military Medicine Training Plan.[17]

These numbers would not exactly make a noticeable difference.

Another possibility might have been to look to women medical practitioners as a possible pool for recruiting, though in October 1959 Major-General K.A. Hunter, the Surgeon General, reported that "At this time there is only one female medical officer in the CFMS, however it is anticipated that some applications may be received as a result of the introduction of the Canadian Forces medical undergraduate 45 month subsidization plan." As usual, the CFMS was short of officers,

> to do routine tasks at the working level, and as approximately 40% of CFMS medical officers will be on a short service commission basis, it is considered there is a place in the CFMS for female medical officers on a short service commission basis up to five years with possible extensions if circumstances indicated.

Hunter noted, "It is considered that it is not practical to consider the employment of female medical officers under certain conditions, i.e... at units where only one medical officer is established; or ... in senior administrative positions,"[18] although he did not explain why.

Recruiting women doctors had potential benefits: "Because of limitations it is impossible to offer an unqualified career opportunity to female officers which will take them to the top, however, in addition to general practice, there are certain specialties where female, as distinct from male, medical officers would be advantageous; e.g. paediatrics and gynaecology. In addition there are limited opportunities in pathology, laboratory and anaesthesiology."

There were, however, perhaps more impediments than opportunity: "As the limitations placed on female medical officers in the Service tends to restrict their transfers, which has an adverse effect on the frequency of male medical officers transfers, it is considered that the total number of female medical officers in the CFMS should not exceed five per cent

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17. NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 31st Meeting CFMC, 25 Apr 68.
18. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, MGen K.A. Hunter, SG, Supporting Data for PMC, 5 Oct 59.

of the total medical officer establishment. There should be no entitlement to postgraduate training during SSC [Short Service Commission], and female medical officers should be released when they acquire married status."[19] It was not the most encouraging of invitations, and the decision of the Personnel Members Committee to limit the total number of women doctors to 2.5 per cent of the total was no improvement.[20] After millennia of gender-specialized roles, 1959 was too soon, especially given the lack of pressure from society as a whole, for the armed services to accept female doctors on an equal basis with their male colleagues.

The shortage of medical officers would thus remain a perpetual problem, in part because of Canadian attitudes towards gender, though from time to time strength would approach establishment, and even if recruiting sometimes appeared hopeful, that still left the issue of specialization or post-graduate work. The latter had to be provided—or at least allowed—if medical practitioners were to be retained beyond their initial terms of service, so the Personnel Members Committee recommended in 1955 that "Subject to the exigencies of the Service and if in the interest of the Service, medical officers may be granted one year of post graduate study, at public expense, in each five year block of service as medical officers, and at any time within that block." Candidates promised to complete their term of duty or refund the cost of training, and in fact study could be extended beyond a year if was deemed to be in the interests of the service.[21] The Defence Council approved the plan.

The next year the armed services went further, Chairman of the Chiefs of Staff Committee General Charles Foulkes announcing that "A tri-service pool of specialist medical officers has been established by agreement between the Minister of National Defence and the Minister of Finance with the object of encouraging the production of highly-qualified specialist medical officers and, once qualified, retaining these specialists on a long-term career basis." There were seven positions in all, including four surgeons-captain, two colonels, and a group captain:

> These officers will be available for specialist duties on a tri-service basis... Their promotion to these higher ranks will be for duty in specifically named positions from which they will not be removed except with my concurrence. If, as a result of individual service requirements, a specialist medical officer is removed from the specifically assigned specialist position

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[19] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, MGen K.A. Hunter, SG, Supporting Data for PMC, 5 Oct 59.

[20] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, PMC 15 Oct 59.

[21] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Extracts from the Minutes of the 75th Defence Council Meeting, 11 Mar 55.

> and posted to a position which does not qualify as a specialist position, the specialist medical officer so removed will relinquish the acting rank held.[22]

A few years later a review of records of qualified specialists found two anaesthesiologists eligible for specialist acting pay in the RCN, along with a public health doctor, a surgeon, an otolaryngologist, and an aviation medicine expert (the navy had an air arm at the time); for the Army there was an anaesthesiologist while for the RCAF there was a pathologist, an aviation medicine specialist, and a surgeon.[23]

All good things come to an end, however, and in the final months of 1960 the Canadian Forces Medical Council agreed that "acting rank as a means of recognition for specialist medical officers should be abolished." Increased pay would be considered instead, using the pay scales for other government services as a guide,[24] since it would seem that "In some cases non-specialist medical officers with greater overall responsibilities in the chain of command, hold lesser rank than specialists working under their jurisdiction." In fact, "relatively junior specialist officers have superseded their non-specialist seniors solely by virtue of specialist qualifications," so that "non-specialists feel they are being discriminated against." Finally, the Council noted, "An improved career field is now open which enables specialists to advance to senior substantive rank."[25] The Personnel Members Committee concurred.

Not that the armed services had any objection to seeing their medical officers specialize; it was merely a case of trying to find the best way to reward them for having done so. By the early 1960s, the medical service had reached a level of sophistication—at least in the eyes of the Surgeon General—comparable to that of Canadian society as a whole, meaning that specialization was to be encouraged. In May 1962, therefore, he made a submission to the Canadian Forces Medical Council, stating, "up to the present time the policy has been for the Canadian Forces Medical Service to bring medical officers undertaking specialist training to Certification level only," an early stage in a doctor's career. He added, "Those endeavouring to further their specialist qualifications by trying Fellowships have been doing so in their own time and at their own expense; except that the six weeks refresher course for Fellowship has been undertaken once only at Service expense... At the present time 14.8% of the medical officers (June 1961) have a clinical specialty of

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[22] NA, RG 24, 83-84/167, Box 7719, 20-1-1, Gen Charles Foulkes, Chair Chiefs of Staff, to CAS, CGS, CNS, 7 Aug 56.

[23] NA, RG 24, 83-84/167, Box 7719, 20-1-1, MGen K.A. Hunter, SG Cdn Forces, to Chair PMC, 7 May 59.

[24] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes 22nd Meeting CFMC, 10 May 61.

[25] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 19 Mar 62.

Certification or better. This compares with somewhat over 30% of specialists existing in the general Canadian medical population."[26]

Something of a balancing act was required, and the CFMS felt that "it would be desirable to have at least chiefs in major specialties in several of the Canadian Forces hospitals with Royal College of Physicians and Surgeons of Canada Fellowship status," although "The degree of encouragement given to suitable candidates and the amount of remuneration in time and fees have not been determined."[27] The Personnel Members Committee agreed that specialists within Canadian Forces teaching hospitals should have the same professional status as their colleagues in civilian medical schools.

To provide concrete examples of the above-described complexities surrounding specialization and clinical work, one can look to psychiatry and psychology. In 1959, a submission for postgraduate training for personnel specialists in the three Services was put forward by the Inter-Service Committee on Joint Training (ISCJT), with the support of the Personnel Members Committee. Treasury Board, however, the final arbiter in allocating taxpayers' resources, decided to defer a decision until the Civil Service Commission could study the matter.[28] By August 1961 it had done so, and the ISCJT repeated its recommendation "of the requirement for the post graduate training of officers in psychology."[29] A few years later, however, in 1966, F.C.R. Chalke, a CFMS Consultant in Psychiatry, wrote to the Surgeon General "As more well trained service psychiatrists establish psychiatric services in military hospitals the lack of adequate clinical psychology services to support them becomes apparent," especially in regards to personnel. Chalke continued:

> For a period it seemed possible for the Personnel Selection Services of the Forces to make available for attachment to Medical Units one or two fully trained clinical psychologists. More latterly some officers so attached have had more limited training and it would appear that no formal arrangements exist to provide for this numerically small but necessary service on any continuing basis... The applied fields of psychology are becoming more divergent and specialized in both practice and training and it may be harder in future to switch personnel from educational, selection or experimental psychology into clinical work without further training, even if those in the first three categories were in abundance in the Service.[30]

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26. NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 24th Meeting CFMC, 11 May 62.
27. NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 24th Meeting CFMC, 11 May 62.
28. NA, RG 24, Acc 83-84/167, Box 7034, 2-490-50, PMC Sub-Committee on Personnel Selection and Classification to J.A. Sharpe, ADM, 29 Jan 62.
29. NA, RG 24, Acc 83-84/167, Box 7034, 2-490-50, ISCJT, Minute of the 111th Meeting, 21 Aug 61.
30. NA, RG 24, Acc 83-84/167, 2-6500-P51, F.C.R. Chalke, Consultant in Psychiatry, CFMS, to RAdm W. Elliott, SG, 20 Jul 66.

In the sphere of psychology, at least, specialization was becoming something of a nightmare, though perhaps a pragmatic approach to the problem might mitigate some of its consequences. In a 1966 meeting attended by, among others, Chalke and Wing Commander J.R. Rassel (Head of the Department of Psychiatry at NDMC), it was quickly established that the National Defence Medical Centre had two positions on its establishment for clinical psychologists. Furthermore, Queen's Regulations and Orders had already been amended to allow the hiring of such personnel on a part-time basis, so as far as NDMC was concerned there were means to provide both services to military personnel and training for specialists. As for other facilities, a study was ordered "to amend the establishment of other major CFMS hospitals to provide a position for clinical psychologists into which a DPSR [Directorate of Personnel Selection and Research] psychologist may be posted or a civilian psychologist hired on a part time basis," in order to achieve the same end. Therefore, "It is anticipated that the CFMS will employ six clinical psychologists—one Major and five Captains—at a future date when they become available," while "The Head of the Department of Psychiatry at NDMC will set up a training programme in conjunction with the Universities so that psychologists may obtain credit for one year spent at NDMC to count toward their accreditation."[31] There would thus be specialized personnel available to deal with psychological injuries and conditions although, as we shall see, the knowledge underlying treatment would be somewhat ambiguous for decades to follow.

Generally, there was no lack of medical officers coming forward with requests to specialize; however, in one area they needed encouragement, and a paper to the Canadian Forces Medical Council of January 1964 presented "the problem of a shortage of medical officers orientated toward Field Medicine and recommended that CFMC approval be obtained for the creation of a specialty in Field Medicine in the Canadian Forces Medical Service on a basis equivalent to a clinical specialty." Examples of where these specialists could best serve included "officers commanding field medical units, medical field staff appointments, and a proportion of the medical officer positions on the Surgeon General Staff, Canadian Forces Medical Service Training Centre (CFMSTC), and Regional and Sub-regional staffs," about 28 positions in all. Using the criteria of the Royal College of Physicians and Surgeons (Canada), qualification would call for a one-year internship, a diploma in military medicine or equivalent (the University of Toronto was developing a one-year course), and a year of postgraduate training in clinical medicine or surgery. Alternatively, the specialty would require postgraduate training leading to a diploma or degree in preventive medicine, hospital administration, or bioscience. Another possibility was to call for a year's residency training in environmental medicine at the Institute of Aviation Medicine or the Defence Research Medical Laboratory, plus a year of preceptorship in field medicine in a field unit, a year-long staff appointment at CFMSTC, or a year of military medicine and training at the Royal Army Medical College at Millbank, or equivalent. Regardless of the route taken, the total time required would be about five years.[32] In fact, exactly two years later Surgeon-Commander D.J. Kidd, Squadron Leader W.J.C. Stevenson, and Squadron Leader P.D. Newberry were granted such certification,[33] no doubt having met much of the necessary criteria before the field was officially adopted.

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[31] NA, RG 24, Acc 83-84/167, 2-6500-P51, Minutes of Meeting to Discuss Clinical Psychologists for Employment in CFMS Units, 5 Aug 66.

Dealing with recruiting and specialization still left the problem of integrating medical officers into the armed services, especially those who had no previous military experience in the reserves. It was not an easy issue to come to grips with. Surgeon Vice-Admiral T.B. McLean wrote in October 1960 that "In the past years there have been different philosophies in the three services as to the need for training medical officers with short service commissions," but "With the introduction of the 45-month subsidization plan," along with other developments, "the Inter-Service Committee on Joint Training supported a training plan for subsidized officers which fulfilled the requirements of each service." It started with three weeks of basic training followed by six weeks of tri-service medical training, and was quickly approved by the Personnel Members Committee. Some items in the curriculum included Naval Customs for those entering the RCN, "World Affairs," the organization and role of the three services as well as of the dental corps, chaplains' corps, and others, and such topics as field organization, the chain of evacuation, the medical organization for mass casualties (including a "Review of errors in management of mass casualties'), psychiatry, wound ballistics, food inspection, immunology, the effects of ionizing radiation, physical training, physiological aspects of changes in pressure, cold and heat injuries, aircraft accidents, and much more.[34]

To Surgeon Vice-Admiral McLean, the above was a marked improvement over previous schemes, such as that for the RCAF which had called for nine weeks at Centralia, a month at the Medical Joint Training Centre, and two weeks at the Institute of Aviation Medicine, a total of

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[32] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 27th Meeting CFMC, 15 Jan 64.

[33] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 30th Meeting CFMC, 20 Jan 66.

[34] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, Surg VAdm T.B. McLean, SG, Supporting Data fr PMC, 27 Oct 60.

4 months (when travel time was taken into account) out of a 33-month short service commission. Another point to consider was just how much indoctrination a medical officer required, for "although there was a real need to give some initial training in Medical Administration, there was not the same requirement for him to attend the Officers Induction Course as applied to other members of the Services, partly because of the individual's being older and more mature, and partly because, as a young medical officer, he would not be faced to the same degree with man management problems requiring an intimate knowledge of Military Law and an awareness of the overall organization of his Service."[35] The RCAF, in the event, had no objections to adopting a new scheme.

Attempts to shorten the indoctrination period had repercussions in other areas, however. In March 1963 the Surgeon General reported that, three years before, the Canadian Forces Medical Council had recommended French-language instruction be provided for subsidized undergraduate students. In 1964, 75 candidates had indeed made their way to Laval, where the necessary courses were given, during the first practical phase of their military training. The Surgeon General had to note that

> the time that could be spared for this programme was very limited. At that time a significant number of students expressed a desire to forego their 1965 summer clinical clerkship in favour of pursuing language training on a full time basis. The number has now shrunk to such a level that it is no longer practical to provide such training; nor desirable that they be taken out of the medical training programme for the required length of time necessary to make them competent in another language.

The Council agreed that under the circumstances medical indoctrination had to take precedence over language training;[36] doctors being hard to recruit, and unwilling to remain for the duration of an entire military career, certain aspects of their development had to be left aside, useful as they might have been.

To make matters worse, MDs were not the only medical practitioners to be in short supply, and another group not keeping its ranks filled to establishment was that of nursing sisters. Surgeon General K.A. Hunter reported in early 1959 that

> From time to time, there has been a shortage of Service nursing sisters to fill establishment vacancies, especially in RCAF units, in Europe. The Matrons-in-Chief of the three Services have studied this problem with a view to providing nursing sisters from one of the other Services, rather than to employ civilian nurses. While all vacancies are presently filled, there will be occasions when it may be necessary to hire civilian nurses. Suitable

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[35] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, Surg RAdm T.B. McLean, SG, to Sec PMC, 30 Mar 61.

[36] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 29th Meeting CFMC, 3 Mar 65.

> civilian nurses are usually the wives of Servicemen and Canadian nurses holidaying in Europe. It is understandable that these nurses are not willing to accept "prevailing rates of pay in the area in which they are employed," as European rates of pay are very much lower than Canadian rates.

Therefore, the Surgeon General recommended,

> authority should be granted to employ civilian registered nurses, who are qualified to Canadian standards, in France and Germany when, due to the exigencies of the Service, regular nursing sisters are not available, at a rate of $10.00 per diem to a maximum of $240.00 per month. While it may be necessary, from time to time, to employ qualified civilian registered nurses at hospitals and stations in Europe, every effort will be made to keep vacancies filled by Canadian Service Nursing Sisters.[37]

The Personnel Members Committee agreed to continue allowing the hiring of nurses locally until the Surgeon-General could conduct a proper survey, but, like doctors, nursing sisters were simply not coming forward in the numbers the armed services needed. By October 1961, 379 were serving of an establishment of 492, a situation worse than that for medical officers, whom as we have seen had 391 in service of an establishment of 461 at that time.[38]

As they had in facing a shortage of doctors, the armed services considered the possibility of recruiting nurses from both genders, but quickly rejected it, the identification of particular professions with either men or women being too strong to be overturned in the early cold-war period. For example, in 1955 the ISMC considered a request by a Vernon L. Ryder for the commissioning of male nurses and responded that its members "re-affirmed their decision of 13 June 1951, confirmed by Personnel Members Committee, which was made in response to a previous request from Vernon L. Ryder, RN. This decision was that there is no requirement for male registered nurses in the Nursing Services of the Navy, Army or Air Force... There is a requirement, however, for persons so qualified to be utilized as non-medical officers functioning as stretcher bearer officers in the RCAMC providing they can meet the educational requirements."[39] Given their qualifications as nurses, they would have had no difficulty meeting such standards.

It was not, however, an issue easily dispensed with, and in 1961 the Associate Minister of National Defence received a note from a Member of Parliament to the effect that

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[37] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 14, MGen K.A. Hunter, SG, to Sec PMC, 23 Feb 59.

[38] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 23rd Meeting CFMC, 11 Oct 61.

[39] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Capt RCN E.H. Lee, Chair ISMC, to Def Sec, nd.

> I have been receiving a fair amount of correspondence concerning the desirability of awarding commissioned rank to male nurses in the Armed Forces, thus putting them on the same level as nursing sisters. The contention appears to be that there are many jobs which require men as highly trained as female nurses... It is also thought that in these circumstances it is unfair to keep male nurses in the subordinate status of medical orderlies.[40]

Three years the matter was still under discussion, Dr G.E. Hall of the Canadian Forces Medical Council suggesting that, in his opinion, male nurses "were well trained professionally and exhibited more job stability than female nurses," no doubt meaning that they did not leave the service when they got married. The Council noted that "several applications had been received from male nurses and the subject of enrolling them in the Nursing Branch had been explored thoroughly, the most recent study having been made in October 1962 at the request of the Canadian Nurses' Association. At that time members of the Surgeon General Staff met with representatives of the Male Nurses' Committee of the Registered Nurses' Association."[41]

At the meeting, the nurses were informed that although male nurses could not be accepted in the Nursing Branch, those with appropriate qualifications could be considered for enrolment as officers in the Medical Administrative Branch where nursing training and experience would be valuable attributes. It was also made clear that the reasons for this policy are administrative and in no way reflect on the professional ability of male registered nurses. The decision to hire only women in the Nursing Branch rested on a number of factors: "It has been proven that nursing sisters have considerable influence on morale, their presence being more readily accepted by servicemen than would likely be the case if male nurses were employed," a rare instance where soldier preference had an influence on policy. Furthermore, the CFMS noted,

> The employment of female nurses, most of whom are not married, permits flexibility. It is not acceptable to employ male nurses to care for female patients so they could not be sent to units where female Service personnel or dependents must be cared for... nursing sisters are not obliged to exercise powers of command over Service personnel and thus their military training can be minimal and is less costly than male officer training.[42]

It should be noted here that, in practice, nursing sisters since the turn of the century had issued instructions to orderlies and others in

[40] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, Maj J.E.A.L. Lamy, SO to Assoc Min to Sec PMC, 24 May 51

[41] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 28th Meeting CFMS, 6 Aug 64

[42] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 28th Meeting CFMS, 6 Aug 64

carrying out their duties, especially in areas where the women focussed their skills, such as in the post-operative care of patients. The CFMS was thus somewhat disingenuous when it noted that "In the tradition of the Services a commissioned male officer must be qualified not only in his specialty, but in a series of subjects sometimes unrelated to his primary job. Such training, plus the ability to command and lead, are prerequisites for male officers."[43] (The reader is reminded, however, that the Surgeon General had already suggested that a male medical officer would not face the same "man management problems" as his colleagues in the fighting services.) There the matter stood—at least for the time being. In 1968 it was announced that "There is now an establishment for four male nurses in the Nursing Branch of the CFMS and these positions are filled,"[44] a policy parallelling that for women medical officers.

Nurses would thus continue to be predominantly female, and would thus continue to experience service life differently in some regards from their male colleagues. Naureen Cambon, for example, was posted to the British Military Hospital at Iserlohn, Germany, soon after Canada sent a brigade to NATO's European theatre. She later remembered that it "was an interesting place to spend two years because we worked long hours but then had very generous time off to see Europe. We lived in what used to be quarters for Nazi troops. The quarters were nice but we were padlocked in at night and told it was to keep out the Polish guards. Being "free" Canadians, we all resented this and used to say what if there were a fire and we could not find the key?"[45] The padlocks were removed.

Audrey Adams' first posting was at Station Beaverbank, located 40 miles outside of Halifax and part of the District Early Warning line:

> On arrival, there was a medical officer in charge, but he was transferred to Uplands or Rockliffe soon after I arrived. I was left in charge of a ten-bed hospital to run as a medical inspection room, with several medical assistants, a clerk, a civilian cleaner, and a civilian MO coming in twice a week to do sick parade. The rest of the time I handled sick parade, as well as tend to families who lived on the base. I also had to dispense medications from the well-stocked pharmacy and set up rotation for evening and weekend duties... Those needing hospitalization were sent to Halifax to the hospital at *Stadacona*, the Infectious Hospital (a case of mumps), or the various civilian hospitals in the case of dependents.[46]

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[43] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 28th Meeting CFMS, 6 Aug 64.

[44] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 31st Meeting CFMC, 25 Apr 68.

[45] E.A. Landells, *The Military Nurses of Canada: Recollections of Military Nurses* (White Rock BC, 1995), 492-493.

[46] E.A. Landells, 608.

Other types of work Adams had to handle herself, and "Twice it was necessary to do some stitching! Once, an airman stood up too fast, and not carefully, from the bottom bunk, [hitting] his head on the top one. The second time it was a Navy officer who lived closer to Beaverbank than *Stadacona* and had already had first aid. There was a third incident where stitches were needed; 'the sink came up and hit me on the china'—but that patient was sent to *Stadacona*!"

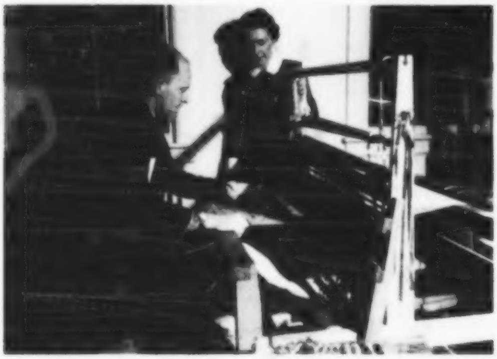
As we have seen, medical officers and nursing sisters were not the only health care professionals serving in the armed forces, and others, such as dietitians, also needed administrative attention from time to time. In 1963, Major-General W.A.B. Anderson, the Adjutant-General, reported that "The situation concerning dietitians in the Army has reached the point where further delay in discussing the Surg Gen's submission," which concerned the recruitment of dietitians, "will result in considerable financial loss since so long as this matter remains pending it is not possible to make definite commitments to the 18 undergraduate dietitians graduating this spring nor to the 15 who will complete their COTC practical training this summer';[47] the COTC (Canadian Officer Training Corps) operated within universities. Suggestions included one from the Surgeon General proposing "that all dietitians be recruited and borne by the Service with the greatest requirement," and another from the Air Member for Personnel (RCAF) that dietitians receive a cash bonus upon recruitment or begin their careers at the rank of captain, as did doctors and dentists,[48] though not nursing sisters.

The air force was certainly aware of the problem, pointing out "that the RCAF were now deficient 15 or 20 dietitians and judging by previous experience there was little likelihood that this deficiency would be reduced soon." Perhaps the answer lay in hiring civilians, although the Army favoured the idea of one of the three services taking over complete responsibility, since it had only eight on strength, of whom six worked in hospitals, and "the career of these individuals was limited" as a result. In the end, after further discussion and further meetings of the Personnel Members Committee in January 1964, it was decided that Air Force Administrative Orders would be amended so that a dietitian would enroll as a Pilot Officer and be immediately promoted to Flying Officer. After four or five years the dietitian might be offered a permanent commission and, after another three years' service, be eligible for promotion to Flight Lieutenant. The Surgeon General suggested the other two services amend their administrative orders accordingly; members of the PMC agreed.[49]

[47] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 26, MGen W.A.B. Anderson, AG, to Sec PMC, 8 Mar 63.

[48] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 26, PMC 20 Jun 63.

[49] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 26, PMC 20 Jun 63; PMC 4 Jul 63.



Occupational Therapy, 1957. Canadian Forces Joint Imagery Centre, CT 560.

Dietitians were in fact one profession among many who served neither as medical officers nor nursing sisters, there being a total of 21 group titles in the three services in 1964 (unification was obviously far from complete). Surgeon General T.B. McLean suggested that

> Utilization of the standard term 'Medical Associate Officer' within the three Services would eliminate the confusion now frequently caused by the use of many varied group designations. Officers thus affected would be carried on one list, similar in concept to that now existing for medical officers. Implementation of the proposal would reduce the number of officer branches within the CFMS to ... Medical Officers ... Medical Associate Officers ... Nursing Officers.

The RCN, at the time, had such designations as Administrative and Medical Technical, the latter incorporating pharmacists, hygiene officers, radiography officers, laboratory officers, physiotherapists, occupational therapists, and dietitians. The Army had pharmacists, physiotherapists, occupational therapists, dietitians, and a group referred to as "Non-Medical," including administrators, "Classified," "Specialist," and "Veterinary." Finally, the RCAF had its own series of classifications, such as "Pharmacist," "Associate," "Support Sciences," "Aero-Medical Training," and "Secretarial." Gathering all of the above under the heading "Medical Associate Officers" soon received the blessing of the Personnel Members Committee, no doubt with some relief on all sides.[50]

At the other end of the rank structure were the medical assistants, who were often the first point of contact patients had with health services, although until the early 1960s they were as disparate as the various medical practitioners who came to be called Medical Associate Officers. Surgeon Rear-Admiral T.B. McLean noted in 1963 that

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[50] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 28, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 16 Jan 64.

> At present there are some 35 different trades within the CFMS, with each trade and trade group calling for a varying standard... This necessitates a separate training plan for each trade group, requires different manuals of instruction and separate instructors, and prevents the centralization of the training plant at the CFMSTC or at the National Defence Medical Centre...[51]

As a Canadian Forces Medical Service Trade Study Group reported in 1962,

> On the formation of the Canadian Forces Medical Service by the unification of the medical services of Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force the medical trade structure of these Services consisted of different numbers of trades. Apart from similarity in some trade names there was a wide variation in career patterns, standards of qualification, training and other factors.

After examining 525 tradesmen and 139 specialist officers, the Study Group recommended greater standardization, where "The trade names selected are based on the overall duties and tasks performed by the various tradesmen and where applicable are those in common use in civilian life." Though it should be possible to advance as a member of a trade without necessarily getting higher military rank, "we are convinced that rank function in the medical career field cannot be carried out without adequate trade knowledge and skill. It is apparent to this Group that, in particular, the Medical Assistant on Independent Duty, the Biosciences Technician and the Hygiene Technician require rank to perform their duties,"[52] since they needed no little authority to be effective in their roles.

The result was two means of advancement, either through the ranks of the military as a private, corporal, sergeant (or their equivalents in the RCN and RCAF), and so on, or as a Group 1, 2, 3, or 4 tradesman. Thus, the study noted,

> The proposed medical trades structure is based on the principle of recruiting and developing a well-rounded general duty medical trades[man] who progresses to trade group two as a Medical Assistant and is then selected for training and subsequent progression in one of the following trades: Medical Assistant Group 3 and 4, Hygiene Technician Group 3 and 4; Laboratory Technician Group 3 and 4, X-Ray Technician Group 3 and 4 and Biosciences Technician Group 3 and 4. In addition a Medical

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[51] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 25, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 23 Jan 63.

[52] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 25, Report on Medical Trades by the Canadian Forces Medical Service Trade Study Group, Aug 62.

> Assistant Group 3 may be selected to progress to Operating Room Assistant Group 4. A somewhat similar pattern is proposed for female personnel as Nursing Assistant Group 1, 2 and 3 with the provision for specially selected candidates to progress from Nursing Assistant Group 2 to Laboratory Technician Group 3 and 4 and X-Ray Technician Group 3 and 4. Likewise a Nursing Assistant Group 3 may progress to Operating Room Assistant Group 4.[53]

All other-rank medical practitioners would thus serve for a time in the general role of medical assistant before specializing.

There was, however, some level of flexibility allowed when it came to incorporating tradespeople into the military world:

> The production of medical tradesmen from unskilled recruits is envisaged as the best method of developing well indoctrinated, well-rounded and flexible tradesmen. Provision, however, is made also to grant provisional trade grouping on the basis of individual assessment of qualifications to recruits holding recognized standing in appropriate civilian medical fields. Similarly technical tradesmen from other career fields may be specially considered for remuster into the Biosciences Technician trade. Specially entered or remustered tradesmen should receive, if not already so trained, normal Service training and appropriate medical training to maintain flexibility in employment.

Still, the main goal would be to develop a pool of general duty Medical and Nursing Assistants at the Group 1 and 2 levels, and for two reasons. First, "It will ensure that all tradesmen in the CFMS have a good general knowledge of the care of the sick and injured in addition to being well oriented in the wide field of military medicine. This will permit flexibility in the employment of the tradesman and provide a reservoir of trained personnel to meet mass casualty or other emergency conditions." Second,

> A minimum period of thirty months will be provided in which junior tradesmen can become familiar with the scope and nature of the other medical trades and therefore be in a good position to select a "career" trade. Likewise selection authorities will have ample opportunity to make the best selection of tradesmen for training in these other medical trades.[54]

Thus, unlike officers, the tradespeople of the Canadian Forces Medical Service would not begin their careers as specialists, but would specialize a little later in their working lives.

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53. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 25, The Report on Medical Trades by the Canadian Forces Medical Service Trade Study Group, Aug 62.
54. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 25, The Report on Medical Trades by the Canadian Forces Medical Service Trade Study Group, Aug 62.

Nursing Sister providing instruction, March 1957. Canadian Forces Joint Imagery Centre, PCN 5

Having determined who to recruit—and how—and having planned out to some extent how these recruits' careers would evolve, it remained to address the not-inconsiderable challenge of training them. Institutionally, an important change in training took place when the medical branches were unified in 1959, the new Surgeon General recommending "the disbandment of The Royal Canadian Army Medical Corps School (RCAMC School), Camp Borden, the disbandment of The Medical Joint Training Centre (MJTC), Toronto, with the consequent formation of The Canadian Forces Medical Service Training Centre at Borden"; the RCN could be phased in later, and the entire process was designed to train medical personnel with fewer instructors than had been required at several different facilities.[55] Although the school is now indeed located in Borden, that was not an inevitable choice: the Vice Chiefs of Staff Committee suggested that such a facility should operate near a major hospital such as Kingston or Ottawa.[56] However, for reasons now obscure but no doubt having to do with facilities already in place in Borden, the Personnel Members Committee decided, in effect, to form the CFMSTC at what had been the RCAMC School, "under one Commandant, with the current establishment of The RCAMC School, to be responsible for the role now performed by the two disbanded units."[57]

What candidates learned at the school was, of course, how to provide first aid, transport patients, set up facilities, and all the myriad tasks that

55 NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 15, SG, Supporting Data for Personnel Members Ctee, 29 Jun 59.

56. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 15, LCol W.A. Todd, Sec Vice Chiefs of Staff Ctee, to Sec PMC, 28 Jul 59.

57 NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 16, AVM J.G. Kerr, Chair PMC, to Minister, 26 Oct 59.

In training, learning to move a patient from a stretcher, March 1957
Canadian Forces Joint Imagery Centre, PCN 18

made up the work of a medical assistant, but to describe these fairly would require a book in itself, so only a few examples of the challenges faced in providing a medical education can be discussed here. In 1960, for instance, it became necessary to determine what form of artificial respiration to teach members of the medical service. As the Surgeon General, Rear-Admiral T.B. McLean, explained, "Methods of performing artificial respiration on asphyxiated victims have shown periodic changes over the years, each with its advocates and opponents. More recently the revived Mouth-to-Mouth or Expired Air Method has come into favour. The accepted technique prior to this was the Holger Nielsen," which relied on the physical manipulation of the arms, among other techniques, to force air into the victim's body. At the time of his report, "the CFMS finds itself pressed to officially adopt for teaching and use a single method to the exclusion of all others. Preference seems to rest with the Direct (Mouth-to-Mouth or Expired Air) Method because of its unquestioned effectiveness when properly performed. There are, however, some real disadvantages to this method which adversely affect its universal acceptance as the unquestionable method of choice,"[58] most likely having to do with a general reluctance to press one's lips against those of an unconscious stranger.

The decision was made in part by consulting other medical services. McLean noted that

> both the Canadian and American Red Cross Societies and the US Armed Forces have officially adopted the Expired Air Method. The St John Ambulance Association and the Royal Life Saving Society of Great Britain

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[58] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, Surg RAdm T.B. McLean, SG, to Sec PMC, 27 Oct 60.

> have retained the Holger Nielsen Method as formerly, but are not adverse to the Direct Method being taught and used."

Until this point, both methods had been taught in Canada, and "In the teaching and application of the Mouth-to-Mouth Method it was considered advisable to minimize the use of accessory paraphernalia and adjuncts such as airways, one-way valves, and suction tubes, in order that individuals would learn the basic fundamentals without becoming dependent upon accessory equipment for efficiency." McLean's view was clear: "The Expired Air, or Direct Method of artificial respiration is unquestionably the most effective method at our disposal at this time, notwithstanding the inherent aesthetic and practical disadvantages." Therefore, it was decided that "The Mouth-to-Mouth (Expired Air) Method of artificial respiration will be the method of choice for use within the Canadian Forces, but the Holger Nielsen Method will continue to be taught." Suggested training materials included "training films ... to demonstrate every phase of the procedure, such as assuring a free airway at all times, effective air entry into the lungs, and the general principles involved in the use of an artificial airway," and "cut-away models of the head, neck and chest to demonstrate the basic anatomy and method of maintaining a clean airway for efficient air entry and exodus,"[59] all this for one procedure among hundreds.

Battlefield first aid, as soldiers had known for centuries, was a specialty all to itself, one in which every aspect of training needed to be examined and revisited in detail. In the course of indoctrination, potential medical assistants occasionally took tests of elementary training, or TOETs in militarese. One such test was brought to the attention of the Surgeon General: the instructor would advise the student of what was wrong with the casualty and then assess the student's subsequent work on the patient; but as Group Captain W.J.F. Young insisted, "In the actual event there would be no one to tell him... An effective test in first aid must assess the ability of the candidate to find out for himself what is wrong, for without this ability he cannot take appropriate action."[60] He recommended the test be changed, but others had more general concerns about how such education was conducted within the medical service. Brigadier J.S. McCannel, responsible for investigating the question for the Surgeon General, found that the main issue among commanders and staff officers was "the apparent complete reliance of the Services on the St John Ambulance Corps." In fact, such reliance was not official

[59] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, Surg RAdm T.B. McLean, SG, to Sec PMC, 27 Oct 60.

[60] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, G/C W.J.F. Young, for SG, to DMT, 1 Oct 62.

policy, though "the St John Ambulance training references, with some minor supplements to meet special Service needs, are comprehensive and appropriate. They are accepted generally across Canada and endorsed by the medical profession. As the Association produces and periodically amends these pamphlets, their acceptance for Service use saves time and money."[61] There was no need, in effect, to reinvent the first-aid wheel.

From the school in Borden, newly qualified medical assistants made their way to various units and facilities, including the field ambulances that had long proved to be the workhorses of the medical service—at least as far as operations on land were concerned. One of these was 3 Field Ambulance, whose commanding officer, Major K.D. McQuaig, described some of the unit's training at a summer concentration in 1960. His first challenge was to make time to concentrate on medical indoctrination, since his unit was responsible for providing medical services to Headquarters 1 Canadian Infantry Brigade Group, Lord Strathcona's Horse, and their supporting units. In fact,

> From 01 Jun to mid July the only Medical Officer with the Field Ambulance was the Commanding Officer. It is recommended that in order to allow the Commanding Officer to carry out his proper function of training and administration, it is imperative that at least two medical officers be posted to the Field Ambulance,

although that particular problem was as old as the medical branch. Another task was hygiene and sanitation, including the report that "Supervision including Poison Ivy Control was carried out by one Hygiene Assistant," attached to brigade headquarters, as well as another with 3 Field Ambulance: "No major problems encountered."

In spite of such tasks, time for medical assistants and other members of the unit to relearn their trade was not totally lacking, and during what McQuaig called the "pre-phase' of training, from 1 to 19 June, troops "commenced 03 Jun 60 with night driving by road and cross country." All drivers, whether of the Service Corps or the Medical Corps, "were included in this training. On 05 Jun three sections commenced section training with two sections siting, setting up and carrying out evacuation under blackout conditions and with one section acting as patients." Also, "The HQ and Clearing Section carried out similar training during this period. Wireless communication was practised during all phases of training." Phase I proper began on 20 June and lasted until the end of the month, and although elements of 3 Field Ambulance were still responsible for providing medical services to the brigade as a whole, "The remainder of the unit continued to train day and night with emphasis on the handling of mass casualties and personnel and patient protection. One or more sections combined on the setting up of the required canvas and the digging of slit and protective trenches…'[62]

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[61] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 28, Brig J.S. McCannel, for SG, to Sec PMAC, 31 Jan 64.

Phase II, from 1 to 8 July, was pretty much the same as Phase I, but Phase III, from 9 to 29 July, was different: "The Medical Officer situation was alleviated by the arrival of Battalion Regimental Medical Officers." Sections of the Field Ambulance, meanwhile, operated alongside battalion groups and moved with them. The rear echelon, however, "interfered with the normal deployment and operating procedures of the section, which resulted in the supervisory staff not knowing the location of the section and some misemployment of section personnel. This situation was rectified before the completion of Exercise Ground Power." Still, such components as company headquarters and ambulance sections, "being in different locations between exercises," had trouble properly preparing for manoeuvres. Two such exercises, Ground Power and Thunderbird, practised defensive operations, the Field Ambulance's sections being under command of battalion groups once again. Meanwhile, "The Ambulance Company Headquarters was located in the vicinity of Main Brigade Headquarters but under control of Forward Logistic Control Centre which was located several miles to the rear." Yet another part of the unit, the Clearing Company Section, was located in the Logistic Battalion area, "a simulated distance of approximately 40 miles." Real distances were challenging enough, so that between headquarters and various sections "wireless communication was unreliable and often non-existent."[63]

There was yet more to the Field Ambulance's tale of woe, as "due to distance involved and restriction of movement to night moves it is impossible to maintain direct supervision and control which is necessary in this type of operation… Under existing arrangements during both Exercises, information on the tactical situation was insufficient and quite frequently delayed until it was impossible to redeploy sections in time to supply maximum medical coverage when required." Another problem resulted because, "As an Exercise expedient it was necessary to employ unit load carrying vehicles," normally used to haul medical supplies and personnel, "for the evacuation of casualties from Ambulance Company Headquarters to the Clearing Company despite strong objections. This was not too realistic as these vehicles would have been required immediately if Unit Headquarters and the Clearing Company Section had been required to move on short notice." The exercise could not, in the end, be deemed successful, as "All sections were not fully employed in their operational role due to lack of exercise casualties and were not exercised in mass casualty evacuation due to the delay in passage of information on nuclear strikes,"[64] which were also simulated. Some lessons needed to be learned the hard way – or so it would seem.

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[62] NA, RG 24, 83-84/167, Box 4974, 3201-830/1, Maj K.D. McQuaig, CO 3 Fd Amb, to Command MO, 26 Oct 60.

[63] NA, RG 24, 83-84/167, Box 4974, 3201-830/1, Maj K.D. McQuaig, CO 3 Fd Amb, to Command MO, 26 Oct 60.

Two years later it was more of the same. In spite of a "shortage of personnel" the unit supported Headquarters 1 Canadian Infantry Brigade Group, 1 Royal Welsh Fusiliers (a British unit), the Queen's Own Rifles of Canada (QORofC), Lord Strathcona's Horse, Princess Patricia's Canadian Light Infantry (PPCLI), 2 Royal Canadian Horse Artillery, 3 Field Engineer Squadron, and others. An outbreak of food poisoning, with 72 victims, was just one of the many challenges 3 Field Ambulance faced that summer. As before, however, the unit managed to conduct at least some training, and "Two sections and a company headquarters," and other components "were trained by means of unit exercises both by day and night... The remainder of unit were employed on camp and Medical coverage duties." Specific skills covered that summer included "Harbour and recce drills, road and cross country tactical moves by day from hide to hide, and by nights"; "Deployment, damage area control drills, relief or unit aid stations," for national survival operations; "Camouflage and concealment, security defensive measures, NBCW protective drills"; for Nuclear, Biological, and Chemical Warfare; "Reception, treatment and evacuation of casualties when personnel were available to use as mock casualties"; and "Drills for setting up an Ambulance Sorting Station using Ambulance Company Headquarters and one or two sections for handling mass casualities [sic]." Also, "One section was attached to 2 QOR of C from 3-5 Jul for exercise Spot Check 3," which involved simulated "mass casualties. Another section took part in a battalion exercise dealing with damage area control drills with 1 PPCLI from 10-12 Jul,"[65] the "damage" in question relating to a nuclear attack.

Other exercises followed in quick succession, with Sudden Clash keeping the unit busy from 13 to 16 July. One of the Field Ambulance's sections moved with each of the brigade's three battalion groups: "The exercise was based on counter penetration and counter attack. A three day rain made the roads extremely hazardous and the exercise was stopped on the 15th. Few exercise casualties reached the Ambulance Company Headquarters but 28 real casualties were treated," providing

[64] NA, RG 24, 83-84/167, Box 4974, 3201-830/1, Maj K.D. McQuaig, CO 3 Fd Amb, to Command MO, 26 Oct 60.

[65] NA, RG 24, 83-84/167, Box 7850, 2-6160-801/3, LCol K.D. McQuaig, CO 3 Fd Amb, to HQ Western Command, 29 Jul 62.

experience perhaps superior to training. Next came Counter Power, from 18 to 20 July: "Two attempts were made to practise the damage control organization but were not successful. One incident produced 27 nuclear casualties, another had 20 for a total of 47 nuclear, and 17 conventional warfare casualities [sic]." Finally, Lightning Strike took place from 21 to 25 July, where "Forty-four exercise casualities were evacuated through the Medical chain of evacuation." All in all a busy month, but "Throughout all the exercises the Field Ambulance moved less, had fewer casualties, and were less involved than in the past three years. Information on the tactical situation was practically non existent on the administration net, and no anticipatory preparations were possible." McQuaig also reported "Delay in movement and preparation that is acceptable for the other services, but is not acceptable for Medical Services."[66]

Whether delay in movement and preparation was acceptable in other services is debatable, but the point was taken, and special medical units had been available for some time to ensure enhanced mobility. These were the airborne medical sections, discussed earlier in this study, which trained separately from the field ambulances—at least until their disbandment in the early 1960s. Major J.E. Gilbert, Officer Commanding No 1 Airborne Medical Section, described some of this training in the summer of 1952:

> Arrangements have been made to hold three short Airborne Exercises at Camp Borden in conjunction with the Airborne Service Corp[s]. In each Exercise, the Airborne Service Corp and part of No 1 Airborne Medical Section will comprise an enemy force which will be parachuted near Borden. In the first Exercise the friendly force will be supplied by the RCAMC School and Officer Candidate School will provide the force in the other two Exercises... These Exercises will provide a further opportunity to test the Standing Operating Procedure (Summer) of No 1 Airborne Medical Section. An RAP Group will drop with the Assault troops and it is hoped that the Treatment Centre can be dropped in at the end of the Exercise which will last approximately 12 hours.[67]

Among the lessons learned was that "Medical equipment should be dropped from a height of about 300 feet. The equipment suffers no damage and the despatching crew in the aircraft can achieve a high degree of accuracy. In this way the Treatment Centre can be established with a minimum of delay." Gilbert also noted that "It is unlikely that the RAP Group will be isolated from the RAP equipment, but each

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66. NA, RG 24, 83-84/167, Box 7850, 2-6160-801/3, LCol K.D. McQuaig, CO 3 Fd Amb, to HQ Western Command, 29 Jul 62.
67. NA, RG 24, 83-84/167, Box 4974, 3201-830/1, Maj J.E. Gilbert, OC No 1 Airborne Med Sec, to DGMS, 15 Aug 52.

man jumps with a Haversack Shell Dressing Airborne." Finally, he concluded, "Experience at North Bay has shown that the troops must leave a DZ [Drop Zone] quickly especially when attack may be expected from hostile aircraft."[68]

The initial impetus for the formation of airborne forces in peacetime was to have at the ready extremely mobile forces to protect Canadian sovereignty in the country's North, so exercises were occasionally conducted in areas where troops might well be operating in time of war, whether actual or apprehended. One, conducted in 1964, was called Renard Bleu, the basic scenario being a landing by about 100 enemy troops on the Labrador coast at Saglek, where they captured a US Air Force radar site and airfield. The parachute company of the Royal 22e Regiment went in to deal with the situation, accompanied by an airborne medical section. The infantry succeeded in reaching some hills near the airfield; then umpires determined that 22 of them were casualties. The airborne medical section set up canvas to shelter them.[69]

One result, however, was to delay the section's move to the airhead prepared by the troops of 3rd Battalion Royal 22e Régiment: "Conversation with the Medical Section Commander made it apparent that no clear order had been given regarding collection and evacuation of exercise casualties prior to the establishment of a medical facility on the captured air head. It was also noted that the Airborne Medical Section dropped with all its equipment and carried, according to the Officer IC [in command], sufficient stores to hold thirty patients for seven days."

That was far more than necessary, as a further wave of troops and supplies were supposed to be airlifted in within 48 hours. Performance was also affected because "The Airborne Medical Section does not have a Medical Officer commanding and this must be a disadvantage on exercise, when tactical decisions must be made in which clinical judgment is required." It was a lesson among many, and if one thing was becoming clear in the late 1950s and early 1960s, it was that infantry commanders (and their armoured counterparts) had too many demands on their attention to give much thought to supporting arms such as the medical service. RCAMC personnel on Renard Bleu would have preferred "a more systematic briefing on their role" in the exercise so they could "gain greater advantage from participation." In all fairness, however, medical practitioners still had much to learn about the basics of their trade. Colonel N.H. McNally, the Regional Surgeon for Ontario, commented that "The Medical Assistants provided by 3 Fd Amb to act as

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68. NA, RG 24, 83-84/167, Box 4974, 3201-830/1, Maj J.E. Gilbert to DGMS, 8 Oct 52.

69. NA, RG 24, 83-84/167, Box 7825, 6100-1, pt 1, Col N.H. McNally, Regional Surg Ontario, Observers Report to Ex Renard Bleu, 23 Mar 64.

in-flight Medical Attendants had not received training in such duties. Qualified personnel are necessary for this task," a lesson as old as Korea—if not older.[70]

Given a perpetual shortage of personnel, it could not have been otherwise, and if there is one lesson to be derived from a study of medical practitioners during the height of the Cold War, it is that a given branch within the armed services would never have the people it needed to perform all of its assigned tasks as comfortably as it would like. By the early 1960s, the Canadian Forces Medical Service might well have been assigned two main roles, one military and the other civilian, but it would be hard pressed attempting to fulfill both.

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70. NA, RG 24, 83-84/167, Box 7825, 6100-1, pt 1, Col N.H. McNally, Regional Surg Ontario, Observers Report to Ex Renard Bleu, 23 Mar 64.

Chapter Five

Operations of the Cold War, Actual and Potential

Although perpetually understaffed in medical officers, nursing sisters, medical assistants, and others, and although focussed on fighting the next war—expected to break out in Europe—as we have seen, members of the Canadian Forces Medical Service still had peacetime tasks to perform. Examining recruits, immunizing against disease, treating injuries and illness, and generally supporting the three fighting services at home and overseas were challenges no less important when the country was at peace than was treating the wounded in time of conflict. Such was especially the case given that the CFMS was tasked with providing lifetime health care to career soldiers, sailors, and air personnel as well as their families and other civilians. Adding to the challenge, of course, was the fact that for the first time in its history the Canada of the Cold War had made overseas commitments, to NATO and the UN, that called for a permanent military presence outside the country's borders. Among the consequences of that war-not-war was not only the need for military medical practitioners to take care of civilians, but for civilian agencies such as the Department of Health and Welfare to look into military matters—Civil Defence being at the top of the list.

As for the military's provision of health care, whether at war or in peace one of the first people a young recruit met in his or her military career—after having dealt with the avuncular figure of the recruiting officer—was a medical practitioner whose job it was to ensure that the candidate was healthy enough for service life. Some, inevitably, were found unfit, as C.M. Drury, Deputy Minister of National Defence, noted in 1954:

> The percentage of recruits who are rejected varies in the three services. This is perhaps accounted for by the differences in recruiting procedure and also by requirements of the particular service... many recruits are rejected for other than medical reasons, before reaching the medical

> officer, such as failure on classification test, lack of education, overage, underage, citizenship, etc.

In 1953 the navy rejected 6.3 per cent of potential recruits for medical reasons, while figures for the army and air force stood somewhat higher, at 28.8 and 17.8 per cent respectively. To exemplify the fact that rejections on medical grounds were in fact rather low, Drury pointed out that the total number of applicants the RCN chose not to recruit was 67.2 per cent, or two-thirds.[1] Although standardization between the three services had yet to be achieved, in 1954 the Defence Council had "agreed in principle that a uniform system should be adopted..."[2]

The armed services, however, whether their recruiting systems were standardized or not, had never managed to discover all of the illnesses, ailments, and conditions afflicting volunteers, and many were medically released early in their careers who should have been spared the rigours of basic training. In the early 1960s the limitations of recruit examination were still obvious, R.G. MacNeil, the Assistant Deputy Minister (Finance) noting the "number of personnel being released on medical grounds within a short period after their enlistment." In the previous five years, 60 had been returned to civilian life with less than a year's service, 25 of them within three months of attestation.[3] The Surgeon General was quick to point out, however, that no medical examination could be perfect, and that of the 60 in question 27 had been released due to neurological or psychological conditions, "all of which would not necessarily be obvious to a recruiting medical officer, and indeed, may have been precipitated subsequent to the individual's enrolment." Another half-dozen had been returned to civilian life because they had flat feet or otherwise suffered from foot ailments, "and it is pointed out that the only true way of assessing flatfoot may be actual trial and error." Another half-dozen had less than perfect vision, which "would only be discovered if a full specialist ophthalmological examination with cyclopegic refraction were done," perhaps a test too expensive and time-consuming to conduct as a matter of routine. Seven had less than perfect hearing, though here the Surgeon General was willing to admit that three might have been accurately diagnosed "by more careful examination." Three suffered from duodenal ulcers, two of them most likely after they joined the service, while "The remaining individuals suffered conditions which are often, either deliberately suppressed by the recruit,

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1. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, C.M. Drury, DM, to G.A. Wright, 25 Mar 54.
2. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6. Extract from the Minutes of the 70th Meeting of the Defence Council, 14 Jul 54.
3. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, R.G. MacNeil, ADM/F, to Chair PMC, 8 Jun 62.

or forgotten by him because of minimal difficulty, or may in fact have developed post-enlistment."[4]

In addition to examination, another medical procedure the recruit faced when joining—and periodically in the course of his or her career—was immunization, which in one form or another dated back to the nineteenth century and the use of cowpox to vaccinate against smallpox. One threat, tetanus, was to be controlled through mandatory immunization, in accordance with Canadian Forces Medical Order 37.01, but the latter did not apply to the reserves. Surgeon General T.B. McLean, in 1962, provided a history lesson for higher authority's benefit in order to expand anti-tetanus immunization:

> Tetanus and gas gangrene infection created a heavy loss of life during the War of 1914-1918, however, as the result of an intensive immunization program initiated in 1939, tetanus was not a problem in Canada's Forces during the War of 1939-45. It is a matter of record that there were only two cases in the Canadian Army and one case in the RCAF.

Research in microbiology confirmed these findings:

> Clostridium tetani, a spore containing bacillus, can remain viable for 10 years or longer under certain conditions. Puncture wounds and lacerations provide their mode of entry into the human body where they produce a lethal exotoxin that attacks the nervous system. After onset of symptoms the death rate for unprotected individuals is 80-100%... Realizing, that today in Canada, there are thousands of people who have not been immunized against tetanus, the DRB Medical Panels who are concerned with these problems, have recommended that the general population be so immunized. They specifically suggest that all members of Canada's Reserve Forces should be actively immunized against tetanus, since these personnel would be a high risk group in association with their duties on survival operations,[5]

following a nuclear strike, of which more later. In any case, faced with the evidence the Surgeon General provided, the Personnel Members Committee concurred in the general immunization of all reservists.

Somewhat more problematic were attempts to control tuberculosis, which in spite of the development of antibiotics in the 1940s still proved a serious threat to public health as the 1950s came to a close, especially in poorer parts of the country where people could ill-afford six months' worth of expensive medication. A possible ally in the war against TB was BCG (Bacille Calmette-Guérien), mentioned in a previous chapter, a somewhat imperfect vaccine which, among other drawbacks, ensured that those inoculated would always test positive for the disease

[4] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, SG to Sec PMC, 6 Jul 62.

[5] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 8 May 62.

it was supposed to guard against. In response to a query from the Canadian Legion, the Inter-Service Medical Committee, noting that its reply had been formulated after a "full examination by the ISMC and specialist officers of the Medical Services," wrote the Personnel Members Committee that

> policies of the three Armed Forces with reference to BCG immunization is in the course of preparation at the present time by the Directors General of Medical Services, and until these policies have been accepted or otherwise by PMC, it is impossible to make a more positive statement than that contained in the attached draft letter.

The letter mentioned an RCAF study, through chest X-rays, which confirmed only a single case of TB among 23,305 air force personnel: "To date no large scale survey has been completed in the Armed Forces utilizing the Tuberculin Test," the letter admitted, although "serving personnel of the Armed Forces who are considered to be exposed to excessive risk of tuberculin infection (notably personnel serving in the medical services) have been subjected to the tuberculin test," and those free of the disease were given BCG.[6]

Six months later, in July 1957, the ISMC spoke with greater confidence, reporting that

> members have examined in detail the comments and opinions of both Service and civilian consultants, data compiled by various health organizations and panels and the need for a definite policy for the protection and immunization of Service personnel. As a result of these extensive studies, it is now possible to submit the ISMC proposed programme which it is felt will provide the level of protection required for all Service personnel, serving both in and outside of Canada.

Under the plan, all service personnel would receive a tuberculin test, and all recruits would be so tested as soon after entry as possible. Those who tested negative would undergo annual retesting, while "Converters," those who subsequently tested positive, "are to be individually investigated both clinically and radiologically in order to determine whether or not active disease is present and to determine the method of treatment and follow-up which will obtain in each individual case." As for vaccination, "All personnel proceeding to areas or to situations where the exposure hazard is greater than normal should receive BCG inoculation. Decision in this regard to be made by the Service responsible," and "BCG vaccination on a greater scale ... will be, for the time being, based on individual Service decisions." Though not in complete agreement with programmes recommended by other agencies, such as the Canadian Legion (and, one could add, the Canadian Tuberculosis Association), the ISMC felt that its plan would "ensure that every precaution is being taken to reduce the incidence of tuberculosis to the absolute minimum among Service personnel."[7]

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[6] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Capt W.A. Walsh, ISMC, to Sec PMC, 18 Jan 57

On occasion, however, there would be little time to deliberate policy within various committees as some health threats arrived—with amazing suddenness—on DND's doorstep. Such was the situation in 1957 when an influenza epidemic looked to make its way around the world; no doubt with the thousands of Canadian fatalities of the 1918-1919 pandemic in mind, health-care practitioners both within and outside the armed services pondered the best approach to mitigate the disease's potential ravages. Within the ISMC, for example, members "studied the possibility that action will be required to provide immunization to personnel of the Armed Forces against the epidemic of influenza which has been reported at widely scattered points throughout the world." As well, a representative of the ISMC attended a meeting convened by the Department of National Health and Welfare to discuss the subject of influenza in Canada—and vaccination. "Representatives of provincial health departments and other Federal departments concerned attended this meeting. Important factors discussed included the prevalence of the outbreaks, the quantities, time schedule and dosage of vaccine, and the priority of distribution of the vaccine which will be available. The present distribution of outbreaks was reported as follows: it has spread from Hong Kong and Singapore in April south to Australia, but it has not established itself there. All countries through Pakistan, India and the Persian Gulf area had reported cases. The Netherlands has had a sharp outbreak. Cases have occurred in ships of the US Navy on both coasts of the USA."

As for the vaccine, the ISMC reported "that up to 30 Sep 57 the maximum doses which can be produced in Canada with present facilities will total 425,000 [the figure in the document has been corrected to 400,000]. Additional vaccine which could be produced up to 28 Feb 58 would be approximately 1,250,000 doses. Costs have been estimated at from $1.00 to $2.00 per dose. At this meeting it was accepted that priority classes should be established on a basis of danger of disruption to national services, and not on a clinical vulnerability basis,"[8] a rather harsh conclusion that exemplified how serious the threat was considered to be. Still, in Canada allowance was only made for 25 per cent of the Mobile Strike Force (responsible for defending Canadian soil), while the brigade in Europe and its base units would not be part of the first round of immunization. The order of priority, as suggested by the Director of Organization, was, first, medical personnel, then signallers, drivers, some cooks, Army Headquarters commands, areas, and camps, movement control, the mobile strike force, dental personnel, as well as, among others, stores and equipment depots, detention barracks (guards and administrative personnel only), and finally, various armed services schools and training establishments.[9]

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[7] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Capt W.A. Walsh, Sec ISMC, to Sec PMC, 9 Jul 57.

[8] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Capt W.A. Walsh, Sec ISMC, to Sec PMC, 31 Jul 57.

It did not require, however, the threat of a world pandemic for authorities to develop a sense of urgency—some medical challenges developed much closer to home. In March 1960 no less a personage than the Minister of National Defence, George Pearkes, VC, chaired a meeting to deal with "the alarming potential of the health hazard to personnel in the Fort Churchill area occasioned by the enteric disease which is endemic in the area," enteric referring to an illness that affects the intestines. Pearkes proposed to review the situation and "to consider the possibility of initiating, in co-operation with the Province of Manitoba, a co-ordinated programme to deal with the overall health needs of the Churchill area." Though the problem in question was endemic rather than epidemic, that in no way reflected on its seriousness, the Surgeon General explaining that Churchill "had been built as a temporary facility by the US Services during the Second World War. It is the only source of hospital care north of The Pas, Manitoba, and serves a total population of 6,850, consisting of 1,100 Canadian and US Service personnel, 900 Canadian and US Service dependents, 2,050 civilians, and a transitory population of 1,000 Indians and 1,800 Eskimos. The hospital admissions are composed of one-third Servicemen and their dependents, one-third civilians, and one-third Indians and Eskimos,"[10] or Inuit.

The authorities acknowledged,

> enteric diseases are endemic in the tundra. The Eskimos and Indians have lived with this condition from time immemorial, but as the white population grows the epidemic possibilities of these diseases is increasing, and is aggravated [sic] by the seriously inadequate water and sewage facilities of the area. In Churchill, epidemics of enteric disease, particularly diarrhoeal disease of newborn and infants, have been of yearly occurrence. Each year since 1955, the incidence and period of infectivity has increased until now the infection is present throughout the hospital throughout the year, and is of extremely great concern in the development of cross-infection amongst the patients and staff. In 1959 there were over 70 cases. The

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9. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 9, Col John Wallis, Dir of Org, to VAG, 27 Aug 57.
10. NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes of a Meeting Held in the Office of the Minister of National Defence, 24 Mar 60.

> infant morbidity, for all cases, in the Churchill area is one of the highest in North America (1958 – 111.7 per thousand live births compared with the Canadian rate of 31 per thousand live births).

The hospital was thus "saddled with the care of disease which originates outside the military, and which is due to a great extent to the low socio-economic circumstances of persons other than military. He considered that such disease is a serious threat to the health of military personnel and their dependents, which was his primary responsibility. In addition because of the presence of US troops and dependents the Surgeon General of the US Army was most concerned,"[11] putting the disease within the scope of alliance warfare.

Its main impact, however, was more poignant, as "the severity of the infection necessitated the closing of the maternity and newborn ward some 18 months ago, and newly-delivered mothers and their babies are now returned to their homes direct from the delivery room four to twelve hours after delivery." Worse, the Surgeon General noted that "disease contamination is now in the hospital buildings and that although emergency measures have been taken by increasing the staff, providing additional equipment, and the provision of a new isolation ward to improve isolation technique, nevertheless these were only temporary measures. They do not correct the medical problem nor the basic sociological problem underlying the medical problem."

He recommended the construction of a new hospital, and it was decided that the Department of Public Works would look into "the feasibility of constructing a prefabricated structure adjacent to the existing federal government building to accommodate an outpatient clinic and to provide living accommodation for a medical practitioner." Also, "The Deputy Minister of National Health and the Surgeon General to visit Winnipeg and discuss with the provincial health authorities the question of an outpatient clinic in the town, and the problem of obtaining a civilian medical practitioner to staff it."[12] At least for the time being, therefore, the fighting services would continue to look to civilian agencies to deal with non-military medical needs.

There was little doubt they faced challenges enough looking after their own members, for even if Canada's armed forces were much smaller in 1963 than they had been in 1943, they were still operating in various parts of the world, so the health risks they faced were no less complex. Malaria, which had caused battalion-scale casualties in the Sicilian campaign of July and August 1943, was no less a problem when observers and peacekeepers were sent to Africa and Asia in the post-war period. Counter-measures were not lacking, but still needed to be reviewed from time to time, as Surgeon General T.B. McLean reported in 1962: "several combinations of drugs are currently being used by the Canadian Forces for the prevention of malaria. This presently varies according to the part of the world in which Canadians are serving and according to the supply system that may be supporting the applicable Canadian service group... It is considered highly desirable to have one uniform anti malarial medication if possible."

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[11] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes of a Meeting Held in the Office of the Minister of National Defence, 24 Mar 60.

[12] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, Minutes of a Meeting Held in the Office of the Minister of National Defence, 24 Mar 60.

He suggested that DND look into what the UN was using, and whether or not that body was willing to adopt "newly-developed' combinations of drugs.[13] L.J. Bruce-Chwatt, the UN's Chief of the Research and Technical Intelligence Division of Malaria Education, pointed out the following month that standardization might not be achievable, since

> the adoption of any uniform anti-malarial regime depends on the particular conditions prevailing in the country where it is to be used. Thus the suppressive or curative drug administration effective in a country like Korea where malaria is at a low level and where P. vivax [a parasite that causes malaria] is prevalent might not be suitable in tropical areas with high endemicity of malaria and predominance of P. falciparum [another parasite that causes malaria].

He provided a World Health Organization report to back up his findings.[14]

If disease prevention was something of a priority in armed forces that remembered how devastating disease had been in many previous conflicts, the result was still no less burdensome to the medical practitioners responsible for making prevention work. Major-General Joseph Jean S.G. Benoit, for one, remembered how such policies could be downright annoying. Graduating from the Université Laval as an MD in 1958, his first posting,

> as a brand new RCAF Medical Officer, was to one of the Pine-Tree Line radar stations at Parent, Québec. These radar sites were situated on hilltops in remote communities along the 50th parallel as part of the North American early warning system during the Cold War. A doctor, one or two nurses and medical assistants provide[d] medical care to the Air Force members manning the radars and to their dependents living on the Station. For Flight Lieutenant Benoit, it was a "postgraduate" course in the school of hard knocks. As a new doctor, he had to rely a good deal on the support and advice of the physician from the community as he faced

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[13] NA, RG 24, v.20,875, CSC 9:11, Surg RAdm T.B. McLean, SG, to CCOS, 14 May 62.

[14] NA, RG 24, v.20,875, CSC 9:11, L.J. Bruce-Chwatt, Chief Research and Tech Intelligence Division of Malaria Education, to Campbell Smith, 21 Jun 62.

> some very difficult medical and injury situations amongst the RCAF members and their families.[15]

Such stations were not located to benefit their staffs; in fact, they

> were situated in the wilds and were seasonally plagued by swarms of black flies. The military approach to this environmental problem was multifaceted. First, everyone was issued personal supplies of black-fly repellent. This had little effect, so households and work sites were issued with hand-operated vaporizers and a DDT solution. This helped a little, but was still not the answer. Then great foggers, towed by trucks were driven around the station, spraying an oily DDT fog over everything and everyone caught outdoors. When this didn't have the desired results, the Air Force flew over the station in a Douglas DC-3 Dakota, carrying barrels of the oil-DDT mixture and equipped for aerial spray. If the station was forewarned, children were brought into the house, laundry was removed from the lines and cars were put under cover, if possible.

Seemingly, an entomologist at RCAF headquarters made the decision when to spray:

> This, it was learned, was based on the "black fly landing reports" supplied by stations along the Pine Tree Line. Station Commanders and the Senior Medical Officers (SMOs) were required to position airmen or airwomen at points around the station, seated with a one-foot square piece of Air Force blue material on their lap, counting the number of black flies that landed on the fabric in a given period. This information was dutifully recorded and sent by "priority" message to Headquarters by 1615 hrs daily. Since the "fly-count" on a piece of fabric did not always reflect the intensity of the fly infestation, the Station Commander and the SMO decided that when an aerial spray was needed, the fly-landing count would, mysteriously, show a dramatic increase over the previous day. When the fly population tapered off, the count would, in like manner, drop to a low level. In this way, they got the spray they wanted when it was needed and were able to warn station personnel and their families to take the necessary precautions before the airplane arrived.[16]

Such problems, as well as the tuberculosis, malaria, and other diseases described above, had been treated as medical conditions from the time they were first discovered, but in other realms the armed services of the post-war period were entering a different, rather nebulous health policy world, especially when it came to dealing with substance abuse. What had been deemed a disciplinary problem in the Second World War was beginning to be looked at in a different light by the early 1960s. For example, in October 1961 E.B. Armstrong, the Deputy Minister, advised the Personnel Members Committee that

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[15] Harold M. Wright, *Salute to the Air Force Medical Branch on the 75th Anniversary, Royal Canadian Air Force* (Ottawa, 1999), 3-4.

[16] Harold M. Wright, 3-4.

> Educational programmes concerning alcoholism have been introduced in some government departments for the purpose of identifying and assisting civil servants who have drinking problems. The Alcoholism Research Foundation is taking an active interest in such programmes in both industry and the government service... In considering a programme for this department it is not intended to convey the impression that we have an extensive number of alcoholics but rather that an employee with such a problem should be given assistance in the early stages... Experience in dealing with our civilian employees who are problem drinkers indicates that most of them do not seek help until their conditions have deteriorated to the point where rehabilitation is almost hopeless. These long-standing cases result in inefficiency, frequent absenteeism, domestic difficulties, and finally dismissal from the government service.

He therefore suggested DND adopt a programme similar to that among public servants,[17] and the Personnel Members Committee replied that "the Services strongly supported this proposal."[18]

By September 1963 the department's official attitude towards the issue was clear, a draft Tri-Service Order proclaiming that "The Department of National Defence policy relating to alcoholism is to treat it as a health problem."[19] In fact, part of a report on a naval exercise called Maple Spring, conducted in 1966, noted under the heading "The AA Group' that "An active group of nine or ten met regularly and were of considerable help with one or two Sick Bay cases who had a problem with alcoholism."[20] (Regarding a somewhat parallel issue, it is of some interest to note a submission to the PMC by Surgeon General T.B. McLean "to draw the attention of Personnel Members Committee to the requirement for an anti-cigarette smoking campaign directed towards personnel of the Canadian Armed Services." What he recommended was an educational programme, which "would involve no extra cost since it would form part of normal training, and training material in the form of films, pamphlets and posters are available free of charge from various sources."[21] We shall see more on the issue in a later chapter.)

Addiction is a chronic condition, but when it came to dealing with acute ailments (and injuries) the armed services needed more than programmes—evacuation procedures were in order. As Surgeon General K.A Hunter pointed out in 1959, in regards to one particular station, "The Army is concerned with the problem of providing adequate

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[17] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, E.B. Armstrong, DM, to PMC, 27 Oct 61.

[18] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, PMC, 16 Nov 61.

[19] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 27, Draft Tri-service Order, Alcoholism, 4 Sep 63.

[20] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

[21] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 27, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 5 Sep 63.

Examining a patient on board HMCS *St Laurent*, 1957. Canadian Forces Joint Imagery Centre, SL 328.

medical care at Alert Bay," the northernmost permanent settlement in the world, "where they anticipate within the near future they will have upwards of 95 personnel. This hinges upon the question of availability of a ready means of evacuating cases from Alert, since it is appreciated that it is not feasible to provide extensive medical facilities at so isolated an outpost where there is such a small population at risk." The Army proposed entering into a formal agreement with the US Air Force to evacuate patients to Thule, in Greenland, where the Americans maintained a large hospital. The Surgeon General, however, thought such an approach unnecessary and recommended the RCAF take responsibility, "and that USAF assistance be sought only when the urgency warrants or when other factors preclude the Air Force carrying out the operation."[22]

A ship at sea could be as isolated as a remote station on land, but since RCN vessels usually operated in squadrons and often had access to an aircraft carrier (for a while HMCS *Bonaventure* filled that role), evacuating the sick and injured did not require the kind of planning and negotiation characterizing such places as Alert. In his report on the 1966 exercise Maple Spring, Group-Captain I.H. Barclay, the Regional Surgeon Atlantic, related that, strictly speaking, there had been no medical evacuation flights during those manoeuvres. Fifteen patients had, however, been "repatriated" for medical reasons, thirteen through service facilities and two by commercial airline. The reasons for their transfer included phobic reaction, nervous breakdown, recurrent shoulder dislocation, chronic chest problems, hepatitis, compound fracture of the

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[22] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 15, MGen K.A. Hunter, SG, Supporting Data for Personnel Members Ctee, 14 Sep 59.

A medical evacuation at sea. Canadian Forces Joint Imagery Centre, BN 2224.

thumb, an internal derangement of a (left) knee joint, crushed fingers, reactive depression, and chronic low back pain. Also, "one burn case from HMCS Antigonish and one case of renal colic from HMCS [sic, actually HMS] Acheron were left in Barbados. One ruptured appendix from HMCS Stettler was left in Mexico in January. The two cases taken to hospital in Barbados were emergencies that occurred at a time when Bonaventure was out of range for helicopter transfer."[23]

Generally speaking, Barclay noted,

> The number of cases returned to Canada from Maple Spring was about the same as the number returned during the cruise of Task Group 301.0 in the fall of 1965, namely fifteen... On each cruise therefore, the number of cases returned for medical reasons would have filled the Sick Bay in Bonaventure. There were thirty or thirty-five other Sick Bay admissions that were cared for at sea. Just prior to arrival in Halifax, upon completion of the cruise, there were fourteen patients in Sick Bay; four of them were post-operative cases... Experience of two ten-week cruises in Bonaventure indicates that in order to make the maximum use of the Sick Bay, as the hospital facility at sea, for three or four thousand personnel, evacuation of those with illness or injury that will cause prolonged disability is mandatory.[24]

That did not, however, make it easy, as Canadian Forces Medical Order number 35.01, which dealt with "Aeromedical Evacuation," contained "no instructions that apply to the evacuation of cases from ships at sea. This order deals at great length with the evacuation of land-based cases by Forward, Tactical and Strategic aero-medical evacuation. It does not mention, even once, any procedure or guidance for sick or injured at sea." Paragraph 3 of that order stated that "all requests for the aeromedical evacuation of cases not provided for by this order shall be referred directly to Canadian Forces Headquarters and the Surgeon General for action." Furthermore, paragraph 18, "Repatriation for Medical Reasons," added that "Aero medical evacuation shall be restricted to personnel who require in-flight medical care and immediate admission to hospital on arrival in Canada. Transportation for personnel repatriated for medical reasons, but not requiring aero medical evacuation as defined above, shall be arranged through normal Service channels." None the less, Barclay observed,

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[23] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

[24] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

> Experience as the Senior Medical Officer during two cruises in Bonaventure reveals that many cases requiring "repatriation for medical reasons" do occur where "normal service channels" of transportation do not exist and where long delays in getting the cases homeward-bound would create significant difficulties within a ship and also interfere with making maximum use of Bonaventure Sick Bay...[25]

The main issue, therefore, was the Sick Bay's capacity, and not the severity of illness or injury.

To the issues of prevention (such as counting black flies) and evacuation (Alert being a particular challenge) can be added that of treatment, but rather than repeat what has already been discussed in previous chapters, or foreshadow what will be related later in this narrative, suffice it to say that the challenge was diverse. For example, in discussing the issue of commissioning male psychological nurses, the Inter-Service Medical Committee related how in peacetime "such psychiatric cases as need special nursing are transferred for treatment, while in the Services, to the control of DVA installations which have psychiatric treatment services,"[26] therefore handing responsibility to another department. The same applied to pregnancy. In 1960 Surgeon General T.B. McLean and his staff prepared a report which aimed "to establish a policy for the release of all Women Personnel upon pregnancy." He noted that

> There is no firm policy in the Navy and Army regarding the release of female officers in the Canadian Forces Medical Service when they become pregnant; each case is considered on an individual basis. The Air Force, and also the WREN Service (Navy) provide for the release of all females in respect of a pregnancy. Since it is desirable to release all women members of CFMS, upon pregnancy"—although why such was "desirable" was left unstated—"and to have a firm policy in this respect, the CFMS is interested in standardizing the procedure within CFMS, and at the same time consider that the policy should be applicable to all Women Personnel of the Canadian Forces.[27]

[25] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

[26] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 7, Brig K.A. Hunter, Chair ISMC, to Sec PMC, 30 Mar 55.

[27] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 4 Aug 60.

The Personnel Members Committee concurred, subject to approval by the Adjutant-General; given the mores of the time, it was deemed that a woman could not be both a mother and a member of the armed forces.

Medical operations within the fighting services were thus as diverse as those within Canadian society as a whole, and perhaps more challenging (few health-care providers in Canada had to deal with malaria). An excellent example of the monthly routine involved occurred within Western Command in the early 1960s, after the unification of the medical branches had been officially promulgated. As Colonel K.J. Coates, the Command Medical Officer, reported in February 1960, "There have been more than the normal occurrences in Western Command during the month of Jan 60 to keep the medical personnel occupied in all units." For example, "The Surgeon General visited Fort Churchill with the Chief of the General Staff's party on 24-25 Jan 60," and "An audit of the accounting section of Fort Churchill Military Hospital was carried out," while "Capt J. Clark, Dietitian, visited Fort Churchill on 26-29 Jan 60 and gave some helpful dietary advice to the staff." During the same period, "The question of medical care for the school teachers and civilians at Camp Shilo has again been raised' and "Plans are underway for the RCAF to utilize the facilities of Winnipeg Military Hospital to a greater extent. This is seen as keeping Winnipeg Military Hospital working at or near peak capacity and speeding up return of RCAF patients." Administrative challenges were not lacking, and "A point for the Surgeon General's consideration has been raised by the Military Registrar at Deer Lodge Hospital... Personnel are reporting for admission to hospital one day prior to release without any form of medical identification," leaving very little time to process their paperwork before they returned to civilian life: "They are from various places in Canada and in most cases their ISM 17s [one of the many forms the armed services cannot do without] are not in Winnipeg," where the soon-to-be discharged personnel presented themselves. Procedures would need tightening.[28]

A year later it was pretty much more of the same, as "Bed states and admissions have been well above average for this time of year. Churchill has had an all time high reaching 90 patients in hospital on 1 Feb 61." One consequence was "Much dissatisfaction ... in evidence in Fort Churchill Military Hospital. Many factors contribute to this state of affairs such as shortage of staff, poor living conditions, the weather and the temperament of individuals. A new hospital and a new female officers quarters are urgently required but the most immediate requirement is an adequate staff." One problem was that "The present accommodation for nurses at Fort Churchill is not satisfactory. The majority of the nurses are quartered in the nurses quarters in the hospital but the remainder are quartered in the female quarters near the mess. This complicates the matter of administration, discipline and control considerably,"[29] though why these commissioned officers needed to be controlled was not explained.

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[28] NA, RG 24, 83-84/167, Box 7851, 6160-875/5, Pt 1, Col K.J. Coates, Comd MO Western Comd, to DGMS, 10 Feb 60.

Another challenge was that "the Indians and Eskimos are requiring and taking up too much bed space and care in a comprehensive treatment hospital. There were over 40 of these patients in Fort Churchill Military Hospital at the end of the month. It is felt that approximately 10-15 of these could have been discharged had they had decent homes to go to where the required food could be provided. Looking over the records one sees them being re-admitted soon after discharge for the same condition which has been neglected and set them back in their recovery. Therefore it is only humane and to their benefit to hold and treat them until they are more or less able to fend for themselves on the flats and tundra. A good foster home or boarding home provided by the Indian and Northern Health Services would be the answer to this problem," the monthly report concluded. To resolve that and other difficulties,

> In the selection of the replacement for the present commanding officer, Fort Churchill Military Hospital, careful consideration should be given to providing a firm, diplomatic and experienced administrator. The professional aspect is far from being the entire requirement and certainly is not the paramount asset in the long run. A smooth working team is required at all costs. This is no posting for a prima donna or one not used to hard work under adverse conditions.

On a different tack, the report noted that "A complete study of the x-ray situation in Regina has been made," "The integration of the medical services in British Columbia Area is progressing satisfactorily," and "The renovation of the MIR Whitehorse is progressing well."[30]

Clearly, military medical practitioners in Canada, regardless of their terms of reference, were not in a position to refuse care to civilians. Richard Foulkes, for one, noted that from August 1955 to August 1957, the RCAF detachment at an airfield near Fort Nelson, British Columbia, had a medical section whose role was supposed to be to support about 350 air force and army personnel as well as their families. In fact, however, it "cared for the urgent needs of an estimated 3,500 human beings

[29] NA, RG 24, 83-84/167, Box 7851, 6160-875/5, Pt 1, Monthly Progress Report, Jan 61.
[30] NA, RG 24, 83-84/167, Box 7851, 6160-875/5, Pt 1, Monthly Progress Report, Jan 61.

in permanent residence in the area, plus an additional 1,000 transient workers in the hinterland. Seventy per cent of both the patients admitted and those seen in the office were civilians other than dependents." In the course of 1956, the section delivered 60 children and performed ten major surgical operations, "along with dozens of minor surgical procedures and applications of plaster casts." It could not be otherwise, since the health of RCAF and military personnel could not be separated from that of the community as a whole; for example, "the ever present threat of typhoid fever and other serious epidemic diseases, required that the medical staff keep a close watch on many aspects of civil life," and, Foulkes could have added, intervene when necessary. The result was the growth of the medical section to the point where, when the RCAF transferred its responsibilities for the airfield to the Department of Transport in 1958, its health facility became the Fort Nelson hospital.[31]

Another who practised medicine within the armed services at this time was John Keith Besley, who eventually rose to the rank of colonel. Commissioned in 1949, he served in Korea as a Battalion Medical Officer before being posted for two years to Quebec City, followed by three years studying surgery in Toronto and a posting to Europe. Returning to Canada, and after furthering his education, he was sent "to the one remaining isolated post for a full time surgeon – Whitehorse General Hospital in the Yukon Territory. He was the Chief Surgeon and Senior Medical Officer (SMO) for the Northwest Highway System (NWHS). This turned out to be one of the most exciting postings of his career." His responsibilities were certainly all-encompassing:

> Major Besley looked after all the military personnel and their families, provided surgical services to the native people and for all other Yukon inhabitants. Providing surgical services to the native Indians proved to be a real problem on occasions and the living conditions in the territory brought with it many interesting surgical problems. Every morning brought a new and often different cases [sic] to deal with, ranging from open skull surgery, open chest surgery and cardiac arrests, to hysterectomies and cesarean sections. Keith considered himself the last of the truly general surgeons known in the Royal Canadian Army Medical Corps.

Conditions were challenging to say the least.[32]

In Europe, meanwhile, by the late 1950s and early 1960s the Canadian Army and RCAF presence had in effect become an extension of Canadian society as a whole, so that the medical challenge in Germany was very similar to those discussed above—though with one important difference, the close presence of a potential enemy. Amadeus Charles King, a Second World War veteran who became an RCAF clerk in peacetime and who was posted to the hospital at Baden-Soellingen in 1959-63, could attest to the atmosphere in which medical practitioners worked. The four years spent in theatre

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[31] R.G. Foulkes, "Medics in the North," *Medical Services Journal Canada* (July-August, 1962), 524, 538, (October, 1962), 676, (November, 1962), 750.

[32] Harold M. Wright, 165.

> were the most stressful, yet the most enjoyable of Sgt King's career. The stress of having a family living in a German village, without telephone communication, of having to live on the base in isolation during "exercises" (***one was never quite certain whether or not they were exercises***), the workload of providing medical care for the military members as well as their families at a Station Hospital staffed only on the basis of the military population, all contributed to a high stress level. The camaraderie of colleagues (***the difference between officers and non-commissioned members was virtually non-existent after work hours***) resulted in a mutually supportive and collaborative social atmosphere that made life relatively enjoyable. Further, it was a learning experience without parallel. Situations arose, in the absences of the hospital administrative officer, that required a junior Sergeant chief clerk to search through the books to find the appropriate answers,[33]

leading to a further blurring of the distinction between officer and other rank.

In any discussion of health-care operations within the armed services, to a consideration of hospitals, stations, and other facilities, which in many ways mirrored civilian institutions, must be added the experiences of the field ambulance units, which in many ways did not. In September 1960, for example, 4 Field Ambulance, based at Camp Borden at the time, submitted a monthly progress report that can be taken as fairly typical. Among the events worth noting was that "Following completion of the 2 CIBG Summer Concentration at Camp Petawawa and in accordance with the training directive for field units, most of the unit personnel proceeded on annual leave. The unit operated on a skeleton staff in each department." Routine items included Captain J.F.P. Couture's attachment to a hospital from 13 August "on instructions of Central Command' and the unit's provision of medical assistant coverage for the Cadet Trades Training Camp at Blackdown Park (in Camp Borden), the Cadet Camp at Ipperwash, the Meaford Military Camp, and the Toronto Military Hospital; also, eight privates were detached from the unit for general duties with the CFMS. Furthermore, confidential reports were completed on all the corporals of the field ambulance and 2nd Airborne Medical Section, and a jeep ambulance was loaned to 9 Company Royal Canadian Army Service Corps for temporary use at Connaught Range, where a rifle competition was being held.[34]

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[33] Harold M. Wright, 251.

One sour note was struck under the heading "Establishment," the report complaining that "At this time 4 Fd Amb is going through rather difficult phase in so far as personnel are concerned"; vacancies included two medical officers (at captain's rank), a lieutenant-pharmacist, two sergeant medical assistants, a corporal storeman-clerk, a corporal hygiene assistant, three general duty corporals, three medical assistant privates, a storeman-clerk private, nineteen general duty privates, six drivers, and two clerk privates. Other personnel problems included two people who would no doubt be posted out of the unit as not fit for battle duty, and, as a result, the unit was operating "with an anticipated shortage of some 50 personnel." To make a bad situation worse,

> During the period 1 Sep to 31 Mar, every endeavour will be made to send personnel on career courses and on job training for upgrading of trades pay. This, along with demonstrations, will present an almost impossible situation, if steps are not taken to fill some of the unit vacancies...

Perhaps the biggest headache was the quartermaster's staff (or QM), which was short one corporal and two privates of an establishment of two corporals and three privates. It was therefore at less than half strength, and "With such a depleted staff, it is impossible to operate as efficiently as one would like, or to plan career individual training such as courses for upgrading to Stmn Clk Gp 3,"[35] that is to say Storeman Clerk Group 3.

Over a year later, there does not seem to have been much improvement, as 4 Field Ambulance's Commanding Officer, Lieutenant-Colonel W.A. Reed, complained in December 1961 that "QM Stores and Orderly Room are still working under a handicap with the lack of personnel. Efforts are being made to in-job-train personnel with a view of sending these personnel on the next available courses in Storeman Clerk and Clerk Admin[istration]."[36] A year after that Reed was reporting a different kind of personnel difficulty, as

> Seven personnel of 4 Fd Amb were involved in a civilian disturbance in Alliston Ont on 3 Oct 62 at 0015 hrs. Summonses were issued and these personnel will appear in magistrates court 7 Nov 62... Two of these personnel were due to proceed to the Middle East 28 Oct 62 but were removed from the draft pending the outcome of this court action.

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34. NA, RG 24, 83-84/167, Box 7850, 2-6160-801/4, LCol D.H.M. Hall, CO 4 Fd Amb, to DGMS, 1 Sep 60.
35. NA, RG 24, 83-84/167, Box 7850, 2-6160-801/4, LCol D.H.M. Hall, CO 4 Fd Amb, to DGMS, 1 Sep 60.
36. NA, RG 24, 83-84/167, Box 7850, 2-6160-801/4, LCol W.A. Reed, CO 4 Fd Amb, to Comd MO, HQ Central Comd, 1 Dec 61.

> Headquarters Camp Borden has been advised that they will be available after 7 Nov 62.[37]

Keeping up with the unit's obligations was thus a personnel challenge on many fronts.

For RCAF medical officers, supporting operations could sometimes provide challenges different from those faced by their colleagues in the Army. In late 1964, for example, Squadron Leader I.H. Anderson, the Flight Surgeon for 1 Air Division in Europe, found himself trying to convince higher authority that a problem existed among the pilots of nuclear-armed CF 104 Starfighter aircraft, who spent long hours at readiness to retaliate against a Soviet nuclear strike or invasion. According to his analysis, as a result of such lengthy periods of no little stress, "A rate of 25 fatigue reactions per 100 aircrew can be expected in the next two years" if the situation remained stable, but "If this situation deteriorates (by an increase of readiness state, for example) a higher rate may be anticipated." Interestingly, "If the international situation deteriorates on the other hand an improvement will probably result in this particular aircrew population," perhaps because reinforcements would decrease individual workloads.

As for the 25 per cent expected to suffer fatigue reactions in the meantime, "it would be realistic to consider that more than half will be lost to squadron strength owing to the high relative risks of trying to treat these individuals within their presently critical work load. There will be more than four aircraft per 100 aircrew lost due to fatigue over the next two years owing to nature of the aircraft and its role."[38] As evidence, Anderson noted, since June 1964, when the current workload had been imposed,

> two fatal accidents where fatigue has been a definate [sic] factor. A third is probably but uncertain. One pilot has been lost to the Air Division owing to the preculiar [sic] stresses involved and another is still operational but the prognosis is poor. Stress reactions have been observed in six aircrew but it has been possible to allow their normal work to continue under increased surveillance. The above figures apply only to approximately fifty CF104 pilots from 3 Wing assessed over a one year period. There is no full time Flight Surgeon at 4 Wing and comparative figures cannot be provided.

There were other units in the division, although "The photo-reconnaissance squadrons at 1 Wing have not been considered as there are work environment factors acting in their favour and they are not yet exposed to the difficulties of QRA and follow-on." The QRA was the Quick Reaction Area where nuclear-equipped aircraft were kept at readiness. Anderson continued, "It is expected that the onset of fatigue will be delayed in this group." There was still time to develop solutions, since "in respect to the present situation this observer can detect no obvious signs of abnormally low morale at this time and there is reason to hope that this state will exist until Feb or Mar 65. It is anticipated however that an increase of fatigue reactions will occur after this date." Finally, he added, "The largest single factor in the prevention (and early cure) of static fatigue states is recognition, both personal and public, and the suggestions tabulated below are aimed at providing this recognition directly or indirectly, and establishing performance norms to which the individual can aspire." His recommendations included limiting tour length to three years or less, limiting operational flying, stressing the deterrent aspect of the formation's operations, setting up a recreation centre where pilots and their wives could get 5-day holidays twice yearly, a public relations campaign stressing the Air Division's efforts, and units paying close attention to such details as food.[39]

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[37] NA, RG 24, 83-84/167, Box 7850, 2-6160-801/4, LCol W.A. Reed, CO 4 Fd Amb, to Comd CO, 5 Nov 62.

[38] NA, RG 24, 83-84/167, Box 7849, 2-6160-1, S/L I.H. Anderson, Regional Flight Surgeon 1 Air Div Aviation Med U, to CO Institute of Aviation Med, 12 Nov 64.

The Squadron Leader's efforts did not, however, receive the kind of attention he perhaps felt they deserved. Group Captain J.C. Wickett of the Directorate of Bioscience, for one, thought Anderson might be overly concerned.

> The report by Anderson is very poorly verbalized unless he is being exceptionally sophisticated in his use of the word fatigue, which I doubt. We feel that he has been overly dramatic... He is generally regarded as a very competent individual in aviation medicine so there probably is a problem. The average monthly flying time in Air Division is 17.5 hours which is not much to keep current on an aircraft such as the 104. Do not feel that we should support a recreation centre (they would continue to talk shop), but would recommend an increase in diverse activities while on alert station.

He was, after all, open to further investigation and, without taking sides on the issues concerned, it is nonetheless clear that peacetime RCAF operations were not what one could call relaxed.[40]

It was also clear that the routine of medical operations in the navy was no less challenging than in the other two fighting services. Like the RCAF, the RCN had its own flight surgeons, though Lieutenant J.G. Gowette's reports from HMCS *Bonaventure* seem to have generated far less controversy than Squadron Leader Anderson's recommendations

[39] NA, RG 24, 83-84/167, Box 7849, 2-6160-1, S/L I.H. Anderson, Regional Flight Surgeon 1 Air Div Aviation Med U, to CO Institute of Aviation Med, 12 Nov 64.

[40] NA, RG 24, 83-84/167, Box 7849, 2-6160-1, G/C J.C. Wickett, D Bioscience, to DSG (PTS), 12 Jan 65.

from Germany. In late 1965 the naval officer was a participant in and witness to a cruise in the North Atlantic, which lasted from September to November. It was "a busy and interesting time from a Flight Surgeon's view point," though thankfully there were no aircraft accidents. "No aircrew personnel were grounded during the cruise and no changes in flying category were required," a set of circumstances seemingly designed to make the flight surgeon's cruise as pleasant as possible. In general, he noted, "Medical care of the aircrew took up considerable time for the Flight Surgeon. Most of this practice took place during normal Sick Bay hours. However, many people were seen in off hours because of their flying commitments." Medical examinations, however, presented a problem "because of a lack of special laboratory facilities aboard the ship. Generally, any of the ship's company that required such a medical were done, the lab work obtained at a hospital in the current port being visited." Still, after four "aircraft incidents," none of which could be characterized as a "crash", "the pilots were seen immediately by the Flight Surgeon and given complete examinations to assess any medical factors that could have contributed to these incidents. In all four cases, no medical problems were found."[41]

As for operations generally, Gowette noted,

> It was my policy aboard HMCS Bonaventure to be present in Flying Control (FLYCO) during the launch and recovery periods. This required considerable time during the day and night. Especially during Sustained Operations when these periods occurred every four hours over a period of days, the work load was heavy... During these times in Flyco, I could observe the pilots performance first hand during the difficult landing-on procedure. Also, the fact that the pilots knew I was in Flyco, seemed to improve my relations with them and they would talk more readily about their problems as they arose.[42]

The good doctor was on to something: Charles H. Brown, a US carrier pilot who later wrote a history of such operations, noted that

> a carrier night-landing was still a stressful experience for carrier combat pilots. Flight psychologists from the Navy's Aeromedical School had conducted one experiment during the Vietnam War in which flight surgeons placed heart sensors on a number of carrier aviators flying in combat. The results of that test showed that all phases of carrier night operations, including the need to be on time at marshal, the catapult shot, and the landing, produced more indications of stress than the heaviest combat.[43]

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[41] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, Lt J.G. Gowette, Flt Surg, Flight Surgeon's Report North Atlantic Cruise, September to November 1965, nd.

[42] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, Lt J.G. Gowette, Flt Surg, Flight Surgeon's Report North Atlantic Cruise, September to November 1965, nd.

[43] Charles H. Brown, Dark Sky, Black Sea: Aircraft Carrier Night and All-Weather Operations (Annapolis, 1999), 186.

Therefore, in keeping with a tradition dating back to the 1930s, Flight Surgeon Gowette put in flying time, amounting to thirteen hours, including "the 350 mile helicopter air evacuation of the 3 severely burned stokers from HMCS Nipigon. This air evacuation presented all the problems of such an emergency at sea," such as the "initial assessment aboard Nipigon," the "transfer by helicopter to Bonaventure," the "initial treatment—IV, morphia, dressings antibiotics and tetanus toxoid," "air evacuation with continued treatment," "interim treatment in England," and "onward journey to the Burn Hospital (RAF Haslar)." In another incident,

> Two days before arrival in Halifax our ship received a call from RN submarine Acheron for medical assistance. The patient concerned had a 3 day history of abdominal pain with vomiting. After I had been transferred to the submarine, via helicopter for initial assessment of the case, an air evacuation to Bonaventure was arranged utilizing Bonaventure's Rescue Helicopter. This transfer was carried out under very difficult conditions due to the wind and sea state... At the time of this writing, the patient is undergoing investigation which will be completed in Halifax on arrival.[44]

Miscellaneous work included giving lectures on various health topics, though "It was difficult to find periods of free time to give lectures because of the nature of the operations," which were obviously of no little intensity. Also, Gowette "was able to initiate Flight Safety meetings aboard Bonaventure. This was done to further Flight Safety and to give the people concerned a chance to discuss their problems." Later, the flight surgeon added that

> Because of the nature of the operations on the carrier, hearing conservation was a continuing programme. Education of people about the problem took place by means of posters, lectures, and private talks. Observations of these people by their superiors ensured that they wore their protective devices... The hearing conservation programme aboard Bonaventure made some gains against the big noise problem aboard the ship, but there is much to be done yet.

All in all, it is difficult to disagree with the flight surgeon's summary of the cruise, his report opining that "Because of the operations aboard Bonaventure, there is plenty of work for the Flight Surgeon. His efforts should be directed toward the understanding of his aircrew and the special problems found in carrier flying. In this way, a potentially dangerous situation can be recognized and corrected before more serious complications arise."[45]

[44] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, Lt J.G. Gowette, Flt Surg, Flight Surgeon's Report North Atlantic Cruise, September to November 1965, nd.

[45] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, Lt J.G. Gowette, Flt Surg, Flight Surgeon's Report North Atlantic Cruise, September to November 1965, nd.

Medically, however, the aircraft carrier *Bonaventure* was unique, and the next-largest ship in the Canadian fleet, the replenishment vessel, was far less capable. One of this class was *Provider*, which Wing Commander L.A. Gazley, at the time the Principal Medical Officer in the carrier, inspected in late 1965. "Two main problems in the ship affecting the medical facilities are (a) Officer accommodation and (b) storage space," he wrote to the Regional Surgeon (Atlantic), although the ship's commanding officer planned to make alterations. An added problem was that documentation concerning the ship was, given circumstances reigning at the time, inaccurate, as "The present terms of reference of the operational commitment of Provider contains the statement that the Sick Bay contains "eight berths." This is incorrect. There are two berths in the isolation ward and four in the general ward. Cabin No 5 situated in the Sick Bay area is used as the ship's officer cabin and is not available to the medical facility because of the shortage of officer accommodation in Provider." Therefore, he suggested, "With regard to the long view of Provider's future function as a larger medical facility for a fleet, it is suggested that ... Existing space does not allow for expansion," and "The installation of an X-Ray machine and developing room would overcrowd the space presently available."[46] The Regional Surgeon (Atlantic), Group Captain I.H. Barclay, was not in complete agreement,[47] but it was clear that the medical facilities on board *Bonaventure* were the best the RCN had afloat.

Such was the state of affairs when the carrier and accompanying vessels (for a total of a carrier, six destroyers, two frigates, a repair ship, and two submarines, with 4000 personnel) made their way to South America for a January to March cruise in 1966. Gowette was still the flight surgeon, reporting that "During the cruise, the weather was excellent for flying and consequently, it was a busy period for the Ship's Flight Surgeon," with a total of 3076 hours flown. Gowette reported a fairly routine cruise: "During this period there were no accidents and only 5 minor ground incidents," the latter referring to minor occurrences on the flight deck or in the hangar. Generally, as one would expect, "Considerable time was spent on the general medical care of the Ship's company and aircrew. There was quite a problem with gastro-enteritis during this cruise, so much so, that on 60 different occasions, a member of the aircrew had to be grounded for a flight. As well, on 6 different occasions, an aircraft had to return from its mission early because a member of the crew had nausea, vomiting and/or cramps and diarrhoea.

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[46] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, W/C L.A. Gazley, PMO Bonaventure, to Regional Surgeon (Atlantic) etc, 10 Dec 65.

[47] NA, RG 24, 83-84/167, Box 7850, 2-6160-3, G/C I.H. Barclay, Regional Surgeon Atlantic, to SG, 15 Dec 65.

Two members of the aircrew developed ureteral colic with urolithiasis," or kidney stones.

> These people were grounded temporarily until they were symptom-free and their urine was clear... As well, they had follow-up urinalyses for the remainder of the cruise. Further studies were arranged on return to Halifax. Early in the cruise, it was necessary to ground three aircrew for refusal to fly. In each instance, the case was assessed and in liaison with the Squadron Commander concerned, these people were returned home to Shearwater for an Air Interview Board.[48]

The death of a 44-year old officer, who collapsed of a heart attack at his desk,[49] must have given pause to those who themselves were working in the middle years of their careers.

So might "environmental studies' such as one conducted with the assistance of Petty Officer E.C. McLeod, where "assessments of noise levels were done at the Landing Signals Officer's platform (LSO) during aircraft recovery. Although the noise was originally thought to be dangerous, it was found, on four different occasions to be in the 90-100 db range—well within limits as laid down in CFMO 40.01, para 15." However, Gowette noted

> The inadequacy of the present noise suppressors worn by Flight Deck personnel... A memorandum was sent to Commander (Air) concerning this problem in order that it could be brought to the Captain's attention for his report on the Ship's Hearing Conservation Program... A continued program of education on Hearing Conservation was carried out by means of films, posters and lectures.

Other record-keeping included "Temperature recordings ... made three times daily during the cruise in representative areas where aircrew and ground crew lived and worked. These were recorded in graph form and given to Squadron Leader D. Soper to assist him in his habitability study aboard Bonaventure. He stated that these graphs would be of help to him because of the long term recording. In the main, these graphs showed that the people concerned were living and working in areas with temperatures at 87-97 F, 24 hours a day, with little temperature change during the 24-hour period." The flight surgeon also gave lectures on such topics as venereal disease, disorientation, and vertigo.[50]

The exercise, called Maple Spring, was an annual event and certainly of a scope to keep supporting branches, such as ships' surgeons, on their toes:

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48. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, Surg Lt J.G. Gowette, Flight Surgeon's Report on South American Cruise, January to March 1966, 23 Mar 66.
49. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.
50. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, Surg Lt G.J. Gowette, Flight Surgeon's Report on South American Cruise, January to March 1966, 23 Mar 66.

> Sick parade averaged about 80 per day. The busiest day was Mar[ch] 10 when 193 cases were seen or treated; of these 62 cases were being treated for diarrhoea... Laboratory procedures carried out in Bonaventure totalled about 340 and some 400 X-Ray films were taken... There were 20 in-patients treated during the exercise for a total of 400 hospital days.

Medical facilities were, in fact, too busy, and

> It was found that ten or more in-patients in Sick Bay caused serious overcrowding of the facility. Extreme difficulty arose in carrying out examination and treatment of patients in the upper bunks and in fact was often impossible. There are nine lower bunks in the Sick Bay and an attempt was made to keep these occupied by patients requiring frequent examination or treatment. Even so, frequent movement of patients was necessary for examination or treatment of upper bunk patients in another part of the Sick Bay. Also frequent juggling of patients, like the game of musical chairs (musical beds in this case) was necessary to maintain a high bed occupancy and still provide reasonably good and safe medical care.

The close quarters complicated all aspects of care:

> There is no space available in the Sick Bay for meal trays, side tables, bed racks, etc which are standard ward equipment in hospitals ashore. There is no bedpan or urinal sterilizer. The rigging of traction apparatus with weights and pulleys, easily done ashore, becomes a major problem in a crowded Sick Bay. Intravenous apparatus encroaches upon the space available to get at and examine and treat the lower bunk patient and requires the use of a step-ladder for the upper bunk patient on IV therapy.[51]

Obviously,

> it becomes a matter of nice judgment as to how much care should be attempted in such conditions. It is indeed a trying experience to maintain high bed occupancy, equivalent to that of a 15 or 20 bed hospital ashore, in the Sick Bay at sea. In time of necessity it could be done for a limited time. The ever present dangers of cross infection in such a crowded space would very likely become manifest after prolonged usage. It would be difficult if not impossible to maintain a satisfactory quality of care of patients in upper bunks. There would be overuse and unsafe use of the operating room for definitive surgical care of all cases requiring surgery over a prolonged period of operations at sea.

Nor was that all, as

> The lack of an independent diet kitchen makes proper feeding difficult. Rationing of supplies of fresh water at sea, particularly in prolonged operations in warm waters would present a serious situation not only to

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[51] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C J.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

> in-patients but also to the entire Sick Bay, particularly the operating room where use of lights is mandatory and raises the room temperature to very high levels.

Proper health care needed more sophisticated facilities, and

> In order to ensure maximum use of Sick Bays at sea during any prolonged exercise in warm waters efficient air conditioning is essential. In any theatre of operations, however, efficient and adequate means for air evacuation of long-term patients to shore establishments would be vital to maintain a high bed occupancy with short-term cases and to ensure a high level of salvage in wounded and seriously ill cases. In short, a Sick Bay at sea should be limited to short-term care and to provision of initial emergency care of the injured, and there should be set up, in conjunction with fleet operations, a reliable medical air evacuation system.[52]

The issue, as we have seen, had come up before.

Heat had also been a topic for much discussion in naval medical circles since the Second World War decision to send ships to the Pacific theatre. Based in part on Gowette's studies, Group Captain I.H. Barclay, the Regional Surgeon Atlantic, reported to the Surgeon General that

> Due to heat and humidity from approximately 15 Jan until 15 Feb in warm waters of the Gulf Stream in the north, to below Rio de Janeiro in the south, there was a period of acclimatization which was tiring and unpleasant for many. Temperatures of 100F and above were common in Mess Decks, Galleys, Cafeterias, Sick Bay and in the Wardroom. In ship machinery spaces in Bonaventure much higher temperatures were recorded. On the platforms in the engine control spaces 120F persisted for the first month of the cruise. During this period of time many officers and men were unable to sleep. Sleeping space on the weather decks, cable deck, quarter-deck, and on the flight deck when flying was not in progress, made it possible for day workers to obtain sleep at night. Night workers, however, could not sleep outdoors by day, and suffered considerably because of inability to sleep in the hot cabins and mess decks.

Attending movies "meant sitting and soaking in one's own sweat," and "Retiring to bed in most sleeping areas inboard meant a restless night on sheets and pillows made soggy by the occupant's perspiration."[53]

Clearly, air conditioning might have been of some use. Barclay, the Regional Surgeon (Atlantic) suggested,

> there is a need to consider the deleterious effect on health, and hence operational efficiency, of many key personnel in the ASW [anti-submarine

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[52] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

[53] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

> warfare] role of the Canadian fleet. Certainly in the aircraft carrier there is a definite need for high personnel efficiency in both aircrew and non-flying personnel. Officers and men require sufficient sleep to ensure adequate rest and maintenance of good health. Air conditioning units could be, and most decidedly should be, installed in the sleeping and dining areas of Bonaventure. In this ship, these areas are also living areas and recreation areas; hence they are occupied and in use for many hours that would not be so used and occupied ashore, day after day. It is suggested that while Bonaventure is in refit, the opportunity be taken to install air conditioning units in these living and dining areas.[54]

Without doubt the challenges posed by high temperatures in tropical latitudes had to be taken seriously, and although there had been no cases of severe sunburn and heat rash caused little lost work-time,

> There were several cases of renal colic probably due in part to dehydration... There was one case of heat exhaustion which occurred after a short period of hard labour in the steam catapult room... The temperature was about 130F. The man collapsed on the deck and was brought to Sick Bay where he recovered after a few hours rest. Sick Bay temperature at the time was 78F which was the average dry bulb measurement while the air conditioning was working. There were a few cases of mild heat exhaustion with rapid recovery after rest in Sick Bay.

In a final word on the issue, Barclay reported that

> During the period of acclimatization in the first three or four weeks of the cruise, many personnel were fatigued, anorexic and mildly dehydrated. Thousands of salt tablets were issued and many gallons of supplementary fluids were provided to personnel employed in such hot spots as the engine spaces, galleys and on the flight deck.[55]

In addition, on any exercise lasting more than a few days the RCN had to deal with the challenges posed by hygiene and sanitation, and Maple Spring was no different. Barclay noted that "The cockroach problem in Bonaventure seems to be under extremely good control since the acquisition and use of pressure sprayers following the fall cruise of 1965. Spraying every 10 to 14 days, with removal of dead roaches and their egg sacks from the ship, has been very effective." However, limited resources for personal hygiene had consequences:

> The need for limiting all personnel to one shower per day in order to conserve fresh water for other uses probably had the bad effect of increasing the number of skin infections much above that experienced during the fall cruise in a colder climate. This could become a serious

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[54] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

[55] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

> problem in prolonged operations in warm waters if water rationing prevented the use of adequate fresh water for personal cleanliness particularly in those tradesmen employed in engine spaces, on aircraft and other engines, and exposed to dirt, grease and oil. It was reported that the submarine Acheron had a large number of its complement under treatment for infected skin rashes and other skin sores. In Bonaventure, there were several admissions to Sick Bay for treatment of skin infections including severe cellulitis [infection of subcutaneous tissue], furunculosis [a condition characterized by numerous boils], boils and one carbuncle.[56]

General conditions that affected a human's outside could have an impact on what went on inside, and "After leaving Sao Salvador, Brazil, there were about 340 cases of diarrhoea treated in Sick Bay. The Ship sailed from Sao Salvador on 6 Mar. The peak of the epidemic was reached on 10 Mar when 62 cases were treated. The epidemic subsided gradually until only 6 cases were treated on 19 Mar." Then,

> After leaving San Juan, Puerto Rico on 21 Mar, the number of diarrhoea cases rose from 4 cases that day to 41 on 23 Mar, subsiding abruptly to 3 cases on 24 Mar. It is of interest here that an American epidemiological team made a study in San Juan in the early part of March this year and reported they had failed to isolate either virus or bacteria as the cause of epidemic diarrhoea in San Juan. Their recommended treatment with Kaopectate and Paregoric was entirely satisfactory. In Bonaventure all stocks of Kaopectate and Paregoric were used on the way from Sao Salvador. It was found that Sulphasuxidine or Sulphaguanadine [compounds with anti-bacterial properties] with fluid diet and an antispasmodic table[t] worked quickly to control the diarrhoea and abdominal cramps.[57]

Finally, under what Barclay called "Cases of Interest" could be lumped venereal disease and surgery. In regards to the former, the Group Captain reported that about 15.5 per cent of *Bonaventure*'s company became infected. For the latter, he provided far more detail, noting that

> General anaesthetics were required at sea for four cases including reduction of a locked knee... reduction of a dislocated shoulder, an appendectomy and the drainage of intra-abdominal abscesses following removal of a perforated appendix in Rio de Janeiro. This latter patient was in Sick Bay from 12 Feb until 25 Mar with persisting drainage.

Shore leave provided its own hazards, and "There were a few minor injuries by knife or broken bottle wounds dealt with by debridement and closure under local anaesthesia. One GSW [gun-shot wound] was treated with debridement, drainage and delayed closure but without

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56. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.
57. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

removal of the bullet lodged behind the left hip joint. This case was in Sick Bay from Mar 3rd to 25th." Finally, Barclay noted,

> Over 100 minor surgical procedures were carried out and included the drainage of abscesses, removal of a piece of steel from an eye with repair of a lacerated lower lid, excision biopsies of skin lesions, a skin graft to a damaged finger, repair of badly mangled fingers with small bone fractures, application of casts and their subsequent removal, one or two IVPs [intravenous], aspiration of swollen knee joint, evacuation of scrotal haematoma [clotted blood mass] and resuture of vasectomy wound, and suture of many lacerations.[58]

Clearly, the surgeon could not carry out his work without help, and "It was a great boon in Bonaventure Sick Bay to have a part-time anaesthetist in the Ship. Surgeon Lieutenant Gowette gave four general anaesthetics during the cruise and did very well in all cases." Clearly, "In order to handle surgical emergencies at sea, it seems necessary to have a surgeon and a part-time anaesthetist in Bonaventure. The combination of Flight Surgeon, General Practitioner, Anaesthetist, Surgeon, will be a continuing requirement to provide reasonably good emergency care of the injured and to carry out the other duties required in the aircraft carrier." Furthermore, he observed,

> The disposition of one MO in each squadron which travels independently also seems to be an ideal. On Exercise Maple Spring 66, Surgeon Lieutenant Paul Mahoney travelled part of the time in CANCORTRON Three [Canadian Escort Squadron 3], then went to CANCORTRON One in Buenos Aires to be with this squadron when it sailed independently of the Bonaventure. Bonaventure MOs were available when required by the accompanying squadron which was without a MO.[59]

Barclay also noted that "It was of considerable value to the surgeon in Bonaventure to have Surgeon Lieutenant Tye," the medical officer for Canadian Escort Division 22, "available to assist with a laparotomy in one of his patients..." Also, the medical assistant "for operating room duty performed very well as the scrub nurse," while a medical assistant on general duty "was able to carry out the duties of float nurse," that is to say, a nurse available for duty throughout the institution. There were still problems to resolve, however, including "an accommodation problem for the squadron MOs in DDEs [destroyer escorts], DDHs [helicopter-carrying destroyers], and in Frigates. As these MOs are usually junior officers, they are given accommodation available after more senior Ships' officers are accommodated. It is suggested that an effort

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58. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

59. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66.

be made to improve the MO accommodation in the squadrons, if at all possible. In spite of their junior rank, perhaps some program of prestige enhancement could be formulated and applied successfully. In fairness to all, however, only one of several Surgeon Lieutenant Medical Officers spoken to about prestige and poor accommodation had any complaints in these facets of duty at sea."[60] Perhaps the nature of the work was more important than any attendant status.

Another area where a ship's surgeon appreciated support was in the realm of transportation. Although we have already seen how evacuation from an exercise or operation, whether conducted by the army or navy, could be greatly eased by air evacuation facilities, aircraft could also be useful in dealing with more routine medical matters. According to Barclay, "As on the fall cruise 1965, much use of the Reserve Helicopter was made at sea for medical services. Transfers for MOs were made several times from Bonaventure to other ships and the submarine Acheron to complete immunization programs, examine patients and to bring patients aboard Bonaventure." For example, he described, "On one occasion, a combined helicopter-destroyer transfer was carried out. The helicopter from Bonaventure to Nipigon landed on, then flew to Stettler and made a pick-up with MO, MedA and the patient, returning to Nipigon. When the Nipigon was within a short distance of Bonaventure, the helicopter took off from Nipigon and landed on Bonaventure. The patient was operated on in Bonaventure. He had acute appendicitis. This patient was returned to his own squadron at Buenos Aires by COD [carrier-on-deck, i.e. readily available] aircraft from Montevideo." Barclay noted that "The COD aircraft was used several times to transport patients. On one occasion, from Montevideo to Buenos Aires, the Principal Medical Officer went as Escorting Officer for three cases being returned to convalesce in their own ships after treatment in Bonaventure. One was the post-operative appendectomy mentioned above, one was a deep laceration of a leg with a severed posterior tibial artery and the other was a large sailor with subsiding prolapse of an intervertebral disc at L4-L5 level," otherwise known as a slipped disc. Therefore, "The rescue helicopter and the COD aircraft are extremely valuable as support aircraft for medical activity in the fleet. The aircrew of both these aircraft are to be commended for their skill and co-operation in all flights involving medical cases."[61] In fact, complaints within the army and navy about local air evacuation services were so rare that this researcher has been unable to come up with a single example.

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[60] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66

[61] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 1, G/C I.H. Barclay, Reg Surgeon Atlantic, to SG, 25 Apr 66

While the medical branch supported the three fighting services on a wide variety of routine exercises and operations, it also prepared for total war, one in which nuclear weapons might play a dominant role. The prospect was daunting, to say the least, and in the early years of the Cold War the armed forces tried to limit the scope of their responsibilities; after all, their resources were limited in any case. Thus in 1950 the Chief of the General Staff, General Charles Foulkes, issued a policy statement limiting DND's participation in Civil Defence to three main areas: assisting civil authorities to make plans, providing security, and providing mobile reserves in a secondary role. The latter might involve reconnoitring of damaged areas, helping to clear debris, basic rescue operations, assisting to restore communications and public services, treating and evacuating casualties in conjunction with civil medical services, assisting in the evacuation of the homeless, and assisting in the distribution of food and water.[62] Limited it might have been, but it was a challenging role nonetheless.

It was not long before Civil Defence authorities (who were civilian as opposed to military personnel) began to organize tests and exercises to determine how to proceed following a nuclear attack. According to one Civil Defence Training and Operational Circular, two types of manoeuvres would be conducted, one federal and the other provincial, with at least four of the latter planned in 1951. The basic scenario was

> an atomic attack on target areas having different characteristics, such as a large metropolitan area, a seaport and smaller areas. The problems involved will be such items as the maintenance of law and order, including the traffic problems; fire defence envisaging large conflagrations of several square miles; a large number of casualties requiring hospitalization, a large number of people rendered homeless; restoration problems involving the clearance of debris, repair of public utilities, transportation, etc.[63]

Again, no little challenge.

One area where the armed services became involved at an early date was in the provision of stores for training and possible operations, and for that purpose an Inter-Departmental Committee on Emergency Supplies was formed. With representatives from the Department of National Health and Welfare (the agency primarily responsible for Civil Defence), the Director-General Medical Services, the Department of Veterans' Affairs, and the Royal Canadian Air Force, at a February 1952 meeting the Committee advised that "Sufficient training equipment was required for first aid stations across Canada – 226 to 250 in number' and that "medical supplies for one hundred operational first aid stations ... should be procured immediately and stored at regional bases." As well, "Improvised hospitals, 50 such units, each capable of caring for 1,000 casualties to be provided with medical supplies... These medical supplies to be stored on a regional basis." The armed services' responsibility in this regard was made obvious when "The Chairman drew attention to the fact that DND medical stores would undertake to procure all articles listed by Civil Defence Health Services including blankets and stretchers. All items of medical equipment would be up to the standards required by the Armed Forces."[64]

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[62] NA, RG 29, v.654, C102-3-2B, Charles Foulkes, CGS, Canadian Army Policy Statement No 65 (DMO & P) Participation of the Armed Forces in Civil Defence, 27 Sep 50.

[63] NA, RG 29, v.659, 106-2-1, Civil Defence Training and Operational Circular No 1/51, 28 Mar 51.

By the mid-1950s the armed services' involvement, though reluctant, had moved beyond the provision of logistics and supply, and medical branches prepared to play a very active role indeed in what came to be called "National Survival" operations. When in 1955 the DGMS announced an upcoming exercise, called Medical Broad Sword, its first aim was very much in keeping with the branch's role, that is "To study the medical support required in a corps in defence and attack in a war in which atomic weapons are used." The manoeuvre's second aim, however, "To study the employment of the RCAMC in a Command in a large scale civic disaster," was relatively new. For the sake of the exercise, this dual role was broken down into three specific problems: first, "The medical plan for a corps deployed to meet atomic attack"; second, commanders and staff officers would look into "The medical arrangements of a corps to handle mass instantaneous casualties during an attack in which both sides use atomic weapons"; and third, they would examine "The action to be taken by the Command Medical Officer, Central Command, following an atomic attack on Toronto."[65] Central Command was the headquarters responsible for most of the province of Ontario.

As 1955 wore on, such studies led to the establishment of a doctrine that would guide National Survival units in case of nuclear attack, the main workhorse for such tasks being the mobile defence corps (or MDC) and its rescue battalions. Clearly, some of the basis for its procedures were derived from work performed in the bombing of London and similar campaigns in the Second World War, although policy-makers were not necessarily willing to adopt such lessons without substantial change. For example, where workload was concerned,

> It was considered in the last war that four hours was the maximum any rescue section could work safely without rest. This is unacceptable in a

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[64] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 4, W.L. Coke, Chair Inter-Departmental Committee on Emergency Supplies, Minutes of the 3rd Meeting, 8 Feb 52.

[65] NA, RG 29, v 659, 106-2-1, DGMS to Worthington, CD Coord, 12 Jan 55.

> disaster of the type envisaged. Risks must be taken and it is considered that fresh troops could be left on the job for a maximum of twelve hours and thereafter at a rate of eight hours on and four hours off. It should be realised that troops on rescue work will get some rest when changing tasks, feeding etc.

There was much about atomic warfare that differed from strategic bombing in the conventional sense, and

> It is possible that after a nuclear attack there may be a certain period during which rescue operations as such (i.e. extrication of casualties from damaged buildings) will be possible only to a very limited extent due to the degree of radioactive contamination in the badly damaged areas; all available forces would then have to be concentrated on the evacuation of casualties from the slightly damaged outer periphery.[66]

* * *

Chain of Evacuation: MDC Rescue Battalions

Places of Rescue
to
Ambulance Loading Point (ALP), (Platoons of the Ambulance Company)
to
Civil Mobile First Aid Unit (MFAU) or to hospital

If a Member of the Rescue Battalion is Injured

to
Battalion Regimental Aid Post (RAP)

* * *

Regardless of conditions, the MDC's rescue battalions would receive instructions from civilian authorities, and it was recommended that their tasks be confined mainly to "General casualty clearance of large areas of damage," 'Quick casualty evacuation of areas threatened by fire," and "Special tasks such as large blocks of buildings in which a considerable number of people are buried e.g. blocks of flats, factories or large public shelters." The core of the rescue battalion's organization was the ambulance company, made up of three platoons, each of which "would establish an ambulance loading point (ALP) or report to a civilian loading point already in being. Ideally three ALPs would be supported by one Civil Mobile First Aid Unit (MFAU)." Thus procedures directed,

> Casualties will be recovered from the "places of rescue" to ALPs by stretcher bearer parties. These parties will be controlled by and led by the stretcher bearer parties of the Ambulance Company, if the Company is working with its own Battalion, otherwise this part of the evacuation will

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[66] NA, RG 29, v.654, 102-3-2, Operational and Deployment Procedures for the Rescue Battalions of the Mobile Defence Corps (Provisional), 22 Dec 55.

> be entirely civilian. The MDC Ambulance Section stretcher bearers will all have received advance[d] first aid training, and will thus be able to carry out any additional first aid necessary.

At the ambulance loading point, patients would be divided into categories: those who required no further treatment and who could be directed to safe areas, those who needed light treatment at a civil mobile first aid unit, those who could be sent directly by ambulance to hospital, and those who required immediate skilled treatment before they could be so moved.[67] It should be noted that the MDC rescue battalion's ambulance company had support of its own, as each of its ambulance sections had, in addition to its six ambulances, a section commander and five privates who travelled separately in a truck containing spare stretchers. Furthermore, each battalion included

> an R[C]AMC element of one Medical Officer, one Sgt and three Cpls who travel in one truck... This detachment forms a Battalion RAP, and is an integral part of the Battalion. Its main function is the medical treatment of the personnel of the Battalion and it must remain with Battalion Headquarters ready to deploy when rescue operations begin... The RAP could assist in accepting local civilian casualties for treatment provided its primary function of looking after the military personnel of the Battalion is not jeopardized.[68]

Rescue operations, however, turned out to be more than the rescue battalions could handle, at least as far as the commentator on one civil defence exercise was concerned. Brigadier H.E. Brown of 2 Canadian Infantry Brigade Group, in discussing one such set of manoeuvres called Post Haste, noted, on the positive side, that "the civil defence packboard system whereby each man carries a certain amount of equipment enables teams etc, to commence operations quickly." There was, however, little else that impressed him, and "Vehicles, equipment not being used, company headquarters etc, were all "camped" in "hot areas." ... the only people who should be in these areas are those who are actually working," it making no sense to allow personnel and materiel to be contaminated unless absolutely necessary. Also, he observed, "Casualty registration seemed to hold up the evacuation of casualties. We, in Civil Defence, teach these procedures; however in the face of radioactivity and the large number of casualties to be processed, it is questionable whether we can really afford the people to register or hold up the evacuation."[69]

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67. NA, RG 29, v.654, 102-3-2, Operational and Deployment Procedures for the Rescue Battalions of the Mobile Defence Corps (Provisional), 22 Dec 55.
68. NA, RG 29, v.654, 102-3-2, Operational and Deployment Procedures for the Rescue Battalions of the Mobile Defence Corps (Provisional), 22 Dec 55.
69. NA, RG 29, v.659, 106-2-1, H.E. Brown Brig 2 CIBG to J. Wallace Canadian CD College, 10 Mar 59.

Worse, rescue techniques could be downright harmful. Brown reported that "Some rescuers waited for stretchers rather than use a door or boards," "The standard of lashing casualties to stretchers, particularly for lowering from upper stories, could be improved," "Very seldom were jacks used to raise collapsed walls or floors. Instead valuable time was wasted clearing the rubble and then hacking through floors," and "Some methods of casualty handling could have been improved viz tugging and pulling injured casualties is not conducive to their recovery." As to the organization of work, "On many occasions rescue men stood around waiting before being required e.g. waiting at the bottom of a building while a casualty was being treated or lashed onto a stretcher. These men could have been doing other jobs only being pulled off the job when they were actually required."[70] It was food—or perhaps a banquet—for thought.

Conceptualizing and testing continued, and although a May 1960 Staff College précis cited a case of 13,000 patients being treated by ten casualty clearing stations in a single day during the First World War to show that the problem of dealing with mass casualties was nothing new,[71] the fact that survivors of a nuclear war would have to be evacuated from contaminated areas created an entirely new level of complexity. In October 1961, staff officers reported that the concept for what were called re-entry operations envisaged the deployment of "a militia element of one medical company of a field ambulance per mobile survival group, supported by volunteer aid detachments from the Order of St John... During the last two months there has been an extensive review (Delta Exercises) of the tasks and tactics to be evolved in effecting the commitment, which has revealed basic inadequacies in the present medical plan." There were three main problems: first, "The number of medical personnel required to process the very large numbers of casualties"; second, "The need to supply accommodation in which sorting and treatment can be carried out"; and finally, "The need to provide and control large quantities of transportation with which to evacuate casualties."[72]

The problem was clear, as "The medical militia company which will be deployed in the average sector of any large target city numbers 10 medical officers and 124 other rank paramedical personnel. Having regard to the very large number of seriously wounded to be cared for, it is considered this medical complement is utterly inadequate to perform the task. For example, CAORE figures for the southwest quadrant of Ottawa, when allowance is made for the fact that only 65 to 70 per cent of the population is rescued, give the casualties resulting from a 5 MT [megaton] ground burst as 28,000, of which 17,000 would be seriously injured." Put another way,

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[70] NA, RG 29, v.659, 106-2-1, H.E. Brown Brig 2 CIBG to J. Wallace Canadian CD College, 10 Mar 59.

[71] G.W.L. Nicholson, *Seventy Years of Service: A History of the Royal Canadian Army Medical Corps* (Ottawa, 1977), 281.

[72] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, DMedPR, Extract of Appreciation on Direct Evacuation Medical Plan for Survival Operations, 18 Oct 61.

> if within a 24-hour period one doctor is able to sort and give instructions to assistants on the treatment of each case and spends only from three to five minutes per casualty, some 44 doctors, 88 nurses and approximately 1,000 additional medical personnel would be needed to sort, treat, help unload and load patients, if the total task is to be accomplished in 48 hours.

The medical company would otherwise require 25 to 30 days just to carry out basic work.[73]

One step towards a solution might be to divide each platoon of a re-entry column into a rescue group and a first-aid group, the latter to sort out casualties into Priority 1 (serious) and Priority 2 (minor). It would also provide treatment "with the aim of alleviating suffering and trauma during evacuation." First-aid posts could be staffed by trained reservists of the infantry corps and could move forward as rescue elements made their way deeper into the disaster zone. Having been provided some form of basic treatment, victims could then be evacuated, with Priority 1 patients being sent to civilian hospitals, located some 50 to 75 miles from the target city and previously organized by the Civil Defence Organization: "If the southwest sector of Ottawa is taken as an example, it would be possible to provide beds in existing hospitals within a distance of 100 miles for the 17,000 Priority 1 casualties." Those labelled as Priority 2 could be billeted in private homes, and, in keeping with the social mores of the time, "a nursing station should be organized in each town to assist housewives in this task."[74]

The reference to housewives was no afterthought, since it was clear the medical service would be unable to conduct National Survival operations on its own and would require substantial support from civilian agencies, such as the already-mentioned St John's Ambulance, and individuals. Brigadier Morgan-Smith, for one, recommended that "In the satellite towns where the provinces establish emergency hospitals as many as possible should be employed in assisting in hospital treatment. Undoubtedly a large number of people will assist in this role who would not be available for movement to more distant areas because of health, age, family reasons, or other reasons that would not permit their movement." Further, he advised,

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[73] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, DMedPR, Extract of Appreciation on Direct Evacuation Medical Plan for Survival Operations, 18 Oct 61.

[74] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, DMedPR, Extract of Appreciation on Direct Evacuation Medical Plan for Survival Operations, 18 Oct 61.

> A mobile element should be trained that could be available at the Mobile Support Columns to assist with first aid treatment, sorting, and preparation for transport to hospital. This element could, and indeed should contain some elements of the women's division, not only for assisting in handling female casualties but primarily for helping with young children.

Finally, in the event of such an emergency, trained civilians could play two roles: first, "If the target city is not hit they should either be prepared for assisting in the minor care in hospitals if that centre is used as a reception area, or moved with evacuees to assist in staffing hospitals in the evacuation sites'; and second,

> If the city is damaged, those survivors who are fit for work should report to the nearest Mobile Support Column. We should not overlook men and women with family responsibilities who might first feel they should proceed with their families to evacuation sites, but at that time would be available to supplement either the Mobile Support Column or static hospitals in the satellite towns.[75]

There was thus much to consider in regards to National Survival operations in the early 1960s, something as simple as the disposal of the deceased requiring substantial research and forethought. As Colonel R.D. Barron advised in July 1960,

> The principle that the burial of the dead in survival operations is not a medical responsibility must be accepted. The identification of dead or unidentified is already under study and has been appreciated as not being a medical responsibility even though some medical assistance may be utilized.

A problem that appeared to require clarification was "'the establishment beyond doubt that death has in fact occurred.' In this regard the JAG [Judge Advocate General] has already set forth the acceptable medical legal tests to determine whether death has occurred." However, he added, "In a re-entry and rescue operation, it is questionable whether any more than one or two of such tests could be applied, i.e. auscultation and/or determination of pulse in a principal artery, by personnel of the re-entry or rescue group."[76]

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[75] NA, RG 24, 83-84/167, Box 7827, 2-6111-A5, Brig G.L. Morgan Smith, for SG, to MGS, 2 Feb 62.

[76] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 1, Col R.D. Barron, ASG 8, to A/DSG(A), 13 Jul 60.

Regardless of the seriousness of injuries, Barron acknowledged, some efforts would be wasted:

> Based on experience of past disasters and catastrophes, it is apparent that rescue workers will attempt to effect removal of moribund casualties who may in fact die during rescue and removal to medical aid and who will be pronounced dead by medical or para medical staff. It appears highly improbable that casualties who show or appear to have the slightest indication of viability will intentionally be bypassed if rescue facilities are available.

Finally, he noted,

> The question has been raised as to the responsibility of medical services having to direct or advise on mass burial in the 48-72 hour period following a disaster as a means of controlling a spread of disease. In such an instance mass burial would have to be effected... However, it is strongly emphasized that such mass burial for control of epidemic disease is highly improbable in the temperate climate of Canada in the period under consideration, i.e. 48-72 hours,[77]

hence simplifying the task somewhat. In fact, in a 1962 paper, Brigadier G.L. Morgan-Smith simply recommended the dead be segregated and left aside for 48 hours "until the rescue phase of survival operations is completed."[78]

By mid-1962 the basic elements of a National Survival plan were in place, with the military now bearing primary responsibility. The first unit to enter a target area would be an advanced treatment company, whose role was "to sort patients en route to civilian medical centre, and resuscitate those who are unfit to proceed." Generally, it was a mix of militia personnel and civilian volunteers, an outline organization calling for a headquarters (with command and communications elements), a medical section (divided into sorting and treatment groups), and a support section (itself divided into transport, labour, and food provision groups). Its military personnel would consist of a commanding officer, three other officers, and twelve other ranks, with the medical section of three officers and ten other ranks bringing the number to 29; civilians would bring the total strength of the company to about a hundred.[79]

The unit was designed to handle an average of 80 patients an hour or a maximum of 120, with the average stay in the treatment station expected to be two hours: "Whenever the flow of patients exceeds this

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77. NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 1, Col R.D. Barron, ASG 8, to A/DSG(A), 13 Jul 60.
78. NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 1, Brig G.L. Morgan Smith, for SG, to DOrg, 16 Jul 62.
79. NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 1, Medical Support for Survival Operations, 19 Jul 62, Appx B.

capacity, the excess will be directed on without a stop." The advanced treatment company would be committed in stages. Within two hours of its arrival, "Traffic control posts are manned by local individuals and are directing medical evacuation vehicles to civilian terminals." An hour later, "Military element of advanced treatment company is now on site and checking casualties in vehicles, as the sorting station begins to function. Very few patients can yet be off-loaded to the treatment station." Within four more hours, "As the civilian element arrives, more of the serious patients may be off-loaded into the treatment station." Eight hours after the initial arrival, "Both sorting and treatment stations are fully manned. Serious patients should be off-loaded to the maximum capacity..." Three hours after that, the "Flow of casualties is slowing down."[80]

An example of the challenges a mobile survival column (made up of an advanced treatment company as described above and three rescue companies) was expected to face was provided by that part of Ottawa between the city proper and the Rideau River. As we have seen, assuming a five megaton burst at Mackay Lake in fair summer weather, at night, and with a fifteen minute warning, casualties were likely to number 28,500, of whom 17,100 would be considered serious. In effect, "the only decision to be made by the first aider is "Can this casualty travel 75 miles before seeing a doctor?"' If the answer was yes, then the patient was categorized as Priority 2; if no, then he or she was deemed to be Priority 1. Within 25-100 miles of Ottawa were 8,300 beds and 300 doctors, and "It would be possible to admit the 17,100 serious cases into these existing hospitals if the hospitals discharged the majority of their sick and prepared to receive casualties equal to twice the number of their total beds now set up. The problems of the existing hospitals can be eased and the evacuation distance can be shortened by rapidly opening up 200 bed Emergency Hospitals. The equipment for these hospitals must be pre-positioned and the staffs must come from outside the 100 mile radius."[81]

Another example of such planning was at Eastern Command, which contained three cities expected to be targeted by nuclear weapons in case of war: Halifax, Saint John, and St John's. For the first of these, re-entry operations were based principally on militia medical units, providing cadres and being brought up to strength by civilian volunteers, in keeping with the general concept we have already seen. Two military

[80] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 1, Medical Support for Survival Operations, 19 Jul 62, Appx B.

[81] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, Department of National Health and Welfare, The CFMS in Re-Entry Operations, Aug 62

groups would enter on highways 1 (from the north-west) and 3 (from the south-west) with a third group moving on highways 2 (from the north) and 7 (from the east). Medical services would be provided by 2 Medical Company, assembling in the Chester area and setting up an ambulance station at Shatford Memorial High School, presuming there was a warning period. The Medical Section of 101 Manning Depot was to move with 2 Medical Company. Meanwhile, the Eastern Command Medical Advisory Staff would make its way to the Target Area Headquarters, in Windsor, while No 50 Dental Unit augmented civilian medical institutions, 5 Medical Company came in from Prince Edward Island by ferry, and 6 Medical Company set itself up in various schools.[82]

As for civilian facilities, each hospital in the area had its own disaster plan, and "All doctors, dentists, veterinarians, pharmacists, nurses, nurses' assistants and adm[inistration] health pers[onnel] have all been advised by instr[uction]s of their action and destination." Furthermore, agreement had been reached with Canadian National Railways to evacuate stretcher-borne patients by rail to designated points some distance from the target area, while bus lines and trucking firms had been contacted to evacuate patients from hospitals to rail loading points.

"Standing Orders and traffic route maps have been issued in quantity" to all those concerned. Major hospitals that were to clear out as many of their patients as possible so as to make room for nuclear casualties included the Nova Scotia Sanatorium in Kentville, the Soldier Memorial Hospital in Middleton, the Colchester Hospital in Truro, the Aberdeen Hospital in New Glasgow, St Martha's Hospital in Antigonish, Sydney City and St Rita's hospitals in Sydney, the Saint Elizabeth Hospital in North Sydney, and the Yarmouth General Hospital in Yarmouth. Planning was underway to establish further emergency facilities, and the total number of beds available would be on the order of 7,000 to 8,000, though doctors would be lacking, so paramedical personnel would be used "to the fullest extent."[83]

As for those who would be responsible for commanding and coordinating such operations, plans were prepared to move them to headquarters from which they could direct matters, although certain imperfections had to be accepted as given. One paper exercise to test such procedures was called Tocsin, Group Captain W.J.F. Young commenting on the results in mid-1961:

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[82] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, Col C.B. Caswell, CO HQ RCAMC East Comd, to SG, 21 Jan 63.

[83] NA, RG 24, 83-84/167, Box 7827, 2-6111-1, Pt 2, Col C.B. Caswell, CO HQ RCAMC East Comd, to SG, 21 Jan 63.

> The warning system for Exercise Tocsin worked well in the circumstances; however, should there be far less time available and should the requirement to proceed to Petawawa occur in the middle of the night in winter, it is felt that this method would break down. It is considered that in these circumstances it is unrealistic to assume that every individual required to report to a central point can provide his own transportation without neglecting his responsibilities to his family. The fan-out system of telephone warning appears reasonable; but some public transportation should be provided in various geographic centres to which individuals could make their own way under private arrangements, on foot or in their own vehicles with their wives, without much time prejudice to the individual survival plan of each family involved... Further, the individuals chosen to go to the Adv[anced] HQ, particularly where the junior staff and other ranks are concerned, should be selected with the location of their private accommodation in mind; e.g. a junior officer or NCO living in Central Ottawa should be selected in preference to one living in Manotick,

to allow for quick marshalling.[84]

Clearly, National Survival was an enormous task, although one which would have to be carried out with a peacetime establishment of medical and other military personnel. If one adds the fact that the Canadian Forces Medical Service already had important responsibilities to fulfil in the early Cold War period, on land, at airfields, and at sea, the difficulties the organization faced become even more evident. Further, until the end of the Cold War and beyond, the CFMS' role parallelled that of the medical professions in Canadian society as a whole. It may thus not have been possible for medical practitioners to give each facet of their overall task the attention it deserved.

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[84] NA, RG 24, Acc 83-84/167, Box 7825, 2-6110-050/53, Surg RAdm T.B. McLean, SG, to DOrg, 17 May 61.

Chapter Six

Medical Research

Even after considering planning, personnel issues, and the general operations of the early Cold War, the picture is not yet complete, as we saw in discussing Korea. Preparing for war in modern times involves more than establishing operational concepts, recruiting, training, and applying one's knowledge in the field; it also requires coming to grips with certain fundamental truths through scientific research. In the medical context, it means finding out how the human mind and body function in normal and under extreme circumstances, although since the Second World War such investigations have had an added, ethical dimension to them that had to be addressed—at least eventually. As we shall see, therefore, medical research was a multi-dimensional enterprise, and one where it could be decades before results could be applied in the field. In fact, some of the work described here would not see fruition until the 1991 Gulf War, a topic to be discussed in the very last chapter of this study.

Indeed, the story is longer still, since the armed services, especially the RCAF, had been conducting medical research since the late 1930s. When in 1961 Surgeon General T.B. McLean recommended the formation of an advisory committee on operational medicine, he was familiar with the issues at stake:

> The term "Operational Medicine" has been accepted by the CFMS as meaning bioscience support for the military services as distinct from clinical support. The CFMS has the normal clinical responsibility for the health of the Armed Forces and for the treatment of disease and injury. In addition to this clinical responsibility, there is also the responsibility for the efficient utilization of the man weapon system. In this regard the medical branch becomes involved in the equipment of divers, in the instrumentation, control and working space environment of aircraft or in the problems associated with armoured vehicles. This medical support is supplied from the time of the writing of the operational characteristic,

> through development to the final stages of the equipment being used in the field. Although the term is “medical”, in fact much of the support is by para-medical personnel, such as biophysicists, physiologists, psychologists, anthropologists, radio physicists, engineers, and other such biological scientists...
>
> The primary function of the proposed Committee will be to advise the Surgeon General. The Surgeon General may then interpret this advice to any member of the Naval Board, the Army Council, or the Air Council.”

An active player in all of this would be the Defence Research Board, which from its formation in 1947 until the late 1960s was equal in status to the Army, Royal Canadian Navy, and Royal Canadian Air Force; it could provide “senior responsible scientists who can advise the Surgeon General on research and development requirements.”[1] The Personnel Members Committee agreed that the committee McLean recommended should be formed, “members to be nominated by the Surgeon General and appointed by the Defence Research Board who would also supply financial support as well as executive assistance.”[2]

At a slightly lower hierarchical level were the establishments that actually carried out work, such as the Defence Research Medical Laboratories (or DRML) in Downsview, part of Toronto. As J.E. Keyton of the Vice Chiefs of Staff Committee explained in 1961, “The resources and energies of the Defence Research Medical Laboratories are directed... to find out what a “normal” man can do, how he does it, what environmental changes he can tolerate and how the stresses imposed by such changes affect his ability to function adequately, both mentally and physically.” As well, the laboratories sought “to help the Canadian Armed Forces find the most effective means of reconciling the demands and stresses of the operational military environment with the capabilities and limitations of human beings, and ... to strengthen NATO’s defence through provision of new information on the mental and physical nature of man in defence environments.”[3]

Further, Keyton noted that “events of great consequence may depend upon the vigilance, precision of thought and dexterity of a single man or a few men in the face of danger while under conditions of acceleration, pressure, temperature, humidity and noise never encountered in civil life.”[4] Specific questions the laboratories might be expected to answer included “What effect has clothing on a man’s ability to solve

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1. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, Surg RAdm T.B. McLean, SG, to Chair DRB, 11 Sep 61
2. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 21, PMC, 12 Oct 61.
3. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, J.E. Keyton, Vice Chair Vice Chiefs of Staff Ctee, 22 Nov 61.
4. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, J.E. Keyton, Vice Chair Vice Chiefs of Staff Ctee, 22 Nov 61

problems in the heat?" "What causes the feeling of dizziness when a person is rotated?" "What conditions affect one's ability to see a very fine line?" "Does the amount of meat in the diet before exposure to heat or cold affect a man's reaction during a subsequent exposure?" "Does noise increase or decrease the ability for mental concentration?" "How do we learn? What factors influence memory?" "How should the knobs, scales, tables, writing surfaces and viewing screens in a cockpit, control panel or command position be placed to minimize the chances of mistakes by the human operator?" and "What conditions affect the maintenance of alertness by a man performing a vital but inherently monotonous job?"[5]

One aspect of such work that was controversial then and has become even more so since was the use of human subjects in medical research. As the Inter-Service Medical Committee reported in 1950, "Much of the research planned for the Defence Research Medical Laboratories necessitates studies on human beings. Some of the experiments would involve day and night participation for one or rarely two weeks at a time. Other experiments may involve living on a special diet for as long as two weeks. Much of the work involved will be physiological in character with exposure to environmental stress." To ensure experimental subjects were truly volunteers, "Before each experiment the nature of the work involved would be carefully explained, having regard to the duties expected of the subjects and the risks, if any, involved for the subjects. There would be no compulsion to participate in any experiments against the will of the individuals. Special care will be exercised in selecting studies involving humans, and there will be close supervision throughout the experiment, and as long after as necessary for maximum safety."[6]

Given such precautions, the Defence Research Board explained that

> 12 subjects are required by DRML for such experiments. It is suggested that each of the three Services contribute towards the required number of subjects, possibly by posting service men for a three- or six-month period to DRML. Some ratio might be fixed, among the Navy, Army and Air Force, for contributions.

The Personnel Members Committee agreed to the necessity for such experiments, but, "owing to the permanent nature of the request on hand, they wondered if civilians could not be hired as subjects." Defence Research Board, however, noted "that it is very difficult to

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5. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 23, MGen W.A.B. Anderson, AG, to Distribution, 4 Oct 62, Appx B.
6. NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Extracts from the Minutes of 293rd Meeting of Personnel Members Committee, Human Subjects for Experiments, Defence Research Laboratories, 24 Aug 50.

hire civilians for this type of work and, from a DRB point of view, Service personnel were by far the best subjects being well disciplined and easy to control."At the same time, however, there was concern about the efficient use of personnel:

> The Chief of Naval Personnel stated that it takes some eighteen months to train a naval recruit from the date of entry to the time he is ready for sea duty. If then he is required to do some heterogeneous tasks, his period of service will have been spent performing duties other than those for which he was trained... The Members for the Army and Air Force supported the views expressed by the Chief of Naval Personnel... The Committee observed that the Armed Services supported the views expressed by the Chief of Naval Personnel.[7]

Ethical issues aside, the fighting branches had more important things to do with their people than to turn them into laboratory animals. The PMC referred the matter to the Defence Council.

The latter eventually approved Defence Research Medical Laboratories' request for test subjects, but in 1953 the Defence Research Board complained that "DRML has attempted to obtain the personnel required on an "ad hoc" basis through the nearest Service Commander. Considerable difficulty was experienced in securing the necessary personnel, and tests originally scheduled for August, 1952, had to be postponed. The net result had been that the responsibility for providing all the personnel finally fell upon the Commanding Officer, RCAF Station, Toronto. Although it is reported that magnificent co-operation has been received from this officer, if the responsibility for providing volunteers continues to fall on this Commander, it is obvious that the request cannot always be met." To justify its needs, DRB listed its research priorities: "Volunteers are needed to study reactions to special conditions of flight, such as the conditions obtaining in service aircraft due to changes of atmospheric pressure or acceleration, and to evaluate equipment proposed to protect aircrew against unfavourable conditions." They were also required "for the study of motion sickness and methods of preventing this, and for the determination of optimum method of load-carrying for infantry equipment in relation to physiological fatigue." As well, some were needed "for the study of the acceptability of experimental service rations, and for investigating methods of increasing the rapidity and accuracy of the individual's response to auditory or visual signals used in the services by improving the equipment or the operational situation in which the operator works." Finally, the DRB assured the Personnel Members Committee, "In all cases the tests are carried out under the controlled laboratory conditions so that accidental circumstances can be excluded from the test, and the results obtained with a minimum of expenditure of the time of the service volunteers assisting in the tests." DRB needed a dozen volunteers for 30 days twice a year, and although civilians had been hired occasionally, some of the tests required personnel with service training.[8]

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[7] NA, RG 24, 83-84/167, Box 7717, 20-1-1, pt 2, Extracts from the Minutes of 293rd Meeting of Personnel Members Committee, Human Subjects for Experiments, Defence Research Laboratories, 24 Aug 50.

The Personnel Members Committee took matters in hand, deciding that the needed personnel would be "supplied in rotation by the three Armed Forces. With such a plan, each Service would be required to provide twelve men for a period of thirty days once every year and a half."[9] Only a few days later, however, "The Adjutant-General advised that he had received a request from the Defence Research Board to make twelve Army personnel available for a period of one to two months for gas research experiments being carried out by DRB," at the Defence Experimental Station Suffield, in Alberta. The Adjutant-General objected: "He had ascertained verbally that this requirement was over and above the rotational allotment agreed upon at the last Meeting... The Members agreed that the request of DRB was beyond the terms of agreement and that the Chairman should approach that Board for further information and clarification of the situation."[10]

Confusion probably arose from the fact that Toronto and Suffield were separate institutions performing quite different work, the former focusing on nutritional and environmental matters, including testing warm clothing, and the latter working in the murky and extremely hazardous field of chemical warfare. It did so in co-ordination with similar facilities in the United States and Great Britain in order to avoid duplication, and early work, in the late 1940s, had included different means of dispersing "particulates," or compounds such as sawdust that could carry biological agents. One problem, for example, was to deploy an agent such that it would form particles no greater than two microns in size "which will penetrate the nose most effectively." To conduct such work, Suffield was organized along lines similar to those of a medical research laboratory, although its goal was not necessarily to cure. It thus incorporated a Physiology Section, a Chemistry Section, a Physics and Meteorology Section, a Bacteriology Section, an Animal Section, an Entomology Section, an Offensive Munitions Section, Engineering Shops, and a Photo Section. Nor was its interest in chemicals purely focussed on gas warfare of the First World War variety, one of its projects being to study the effect of heat produced by a flame thrower on goats placed inside a defensive bunker.[11] Obviously, human test subjects were wanted for less destructive experiments, one example being the dispersion of "particulates" such as mustard gas over soldiers in trenches, in the open, or in dugouts. It was a posting frought with no little hazard.

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[8] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Chair DRB to Chair PMC, 15 Jan 53.

[9] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Extract from the Minutes of the 405th Meeting of the Personnel Members Committee, 23 Jan 53.

[10] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Extract from the Minutes of the 406th Meeting of the Personnel Members Committee, 29 Jan 53.

The difference between such work at Suffield and what was being done in DRML was highlighted in March 1953 when the Defence Research Board requested a large group of volunteers. A dozen were for a 30-day period, twice a year, at the Defence Research Medical Laboratories, but the Suffield Experimental Station demanded "Up to 150 man-months, for spray trials with agent simulants and for other trials."[12] The PMC had no problem with the first, but found the second "nebulous",[13] and some of its members may well have been aware of fatalities incurred during such testing during the Second World War. Work, including the use of Canadian military personnel as human volunteers, had continued into the postwar era,[14] hence Suffield's request, but using chemical weapons against members of one's own armed services was definitely an issue to give pause. Further investigation and discussion were required to determine that, at Suffield, "there was a standard requirement for field trials to determine the effectiveness of protective clothing," and that "Most spray trial requests originate in the Army and usually involve testing under mobile troop movement conditions in the field rather than on concentrated targets. Therefore, it was likely that the greatest call would be for Army personnel." The PMC finally agreed to the request,[15] but the hazards were clear. (It is unknown if there were any fatalities due to research at Suffield in the postwar period. Some files are still classified as the centre continues to operate.)[16]

Obviously, medical experiments, especially at the Defence Research Medical Laboratories in Toronto, varied in aims and methodology. The Defence Research Board explained that one group of volunteers from the Army would be involved in "the investigation of the effect of ascorbic acid in the diet on the resistance of humans to cold." To encourage the troops, the Superintendent of DRML "stated that he will be pleased to address the potential volunteers if it is so desired by the Army authorities. He has also asked if it would be possible for the Army to give the volunteers a medical examination before sending them to DRML. They will also receive a medical examination at DRML before the tests commence but a preliminary medical examination by the Service would ensure that only physically fit volunteers are sent to DRML in the first place."[17] Another series of tests investigated the effects of atropine, used as a counter-measure to nerve gas "in normal males under simulated tropical conditions," five groups of four men each being detailed for the task. Specific training was required: "Since it is desirable to evaluate particular skills of the soldier, all men detailed will be given one week training prior to despatch on the following... Loading Bren magazine (minimum time)... Replacing breech block in Browning M[achine] G[un] (minimum time)... Ability to record compass bearings (speed and accuracy)." It would not be a pleasant outing for the troops, with temperatures of 100F and drug injections at 6 a.m. on the third and sixth days of the experiment, although movies would be shown every evening.[18]

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[11] DHH 91/364, DRB Experimental Station Suffield, Alberta, Progress Report for Period April 1st to 30 September, 1947.

[12] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, DRB to Chair PMC, 6 Mar 53.

[13] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Extract from the Minutes of the 413th Meeting of the Personnel Members Committee, 19 Mar 53.

[14] John Bryden, *Deadly Allies: Canada's Secret War, 1937-1947* (Toronto, 1990), 252.

[15] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, Extract from the Minutes of the 414th Meeting of the Personnel Members Committee, 26 Mar 53.

[16] See John Bryden's *Deadly Allies*, the epilogue, for more on the issue of documentation.

Even more gruelling, as things turned out, were experiments conducted by the Department of Psychology of the University of Manitoba on behalf of the Defence Research Board. These dealt with "the problems of isolation which would be inherent in space flight," an exciting prospect until those undergoing testing actually experienced the rigours involved. One officer with the project, Group Captain W.A. Gamble, explained that "these experiments are most arduous, involving the complete isolation of volunteer subjects from all social influences as well as from all light and sound for periods of up to one week." The problem was that "it has been found that very few people, even those highly motivated by scientific curiosity and patriotism, will withstand these conditions for more than a couple of days, and that it is necessary to resort to motivation pay at a constantly increasing rate," the total sometimes amounting to 125 dollars for those who made it to the seventh day. Since service personnel were not allowed to accept money from a third party, Gamble recommended the troops be allowed to forego their regular salary in favour of the higher University of Manitoba motivation pay.[19] The Chief of the General Staff would have none of it, as "he felt that the Services have a right to expect in peace and most certainly in war, servicemen to undertake unpleasant and

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17. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, DRB to Sec PMC, 20 Apr 53.
18. NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 5, MGen W.H.S. Macklin, AG, to Army HQ, 13 May 53, Appx B.
19. NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, G/C W.A. Gamble, Chair ISPC, for Signature Minister ND to GG in Council, 20 Jul 60.

hazardous tasks." He also worried about the effect of such measures: "the Services may set a bad precedent if they attempt to get authority to pay servicemen to participate in unpleasant exercises or experiments." There was some doubt, too, about the value of the research: "he wondered if the Services are not "jumping the gun" a bit in preparing or examining the conditions under which Canadians' might participate in flights into space."[20] The Adjutant-General, however, simply pointed out that service personnel could indeed be given leave without pay.

The situation regarding test subjects was not a simple one, given the kinds of experiments they were expected to endure, and in late 1961 J.E. Keyton noted that Defence Medical Research Laboratories had come to depend on cadets from the RCAF school in Centralia, other RCAF personnel, members of DRML's staff, civilians, and even the wives of RCAF personnel to carry out its work. He therefore suggested that a team of a half-dozen members of the armed forces be provided for duty at the laboratories.[21] It should be noted here that although service personnel might state a preference as to where they wished to be posted, the final decision remained with higher authority—they could thus not be considered volunteers in the strictest sense of the word. Major-General J.P.E. Bernatchez, the Vice-Chief of the General Staff, reminded his colleagues of this very fact, opining that "notwithstanding the Vice Chairman DRB's statement that the men would not be exposed to hazards not encountered elsewhere in the armed forces in peacetime, this type of service should only be undertaken by men who signify their willingness to do so." Given sufficient volunteers, however, he was willing to authorize the necessary postings.[22]

A year after the issue had first been broached, orders were issued for the three services, in rotation, to provide a test team of six men for six weeks, although "Personnel should be volunteers…'[23] The Defence Research Board later specified that "None of the experiments will involve operations or exposure to toxic agents and no subject will be required to take part in an experiment that has not been first fully explained to him or without his full and willing consent. Members of the civilian scientific and technical staff of the laboratory will have previously participated as subjects in all experiments before volunteers from the Services are asked to serve as subjects in experiments of the same nature."[24] It

[20] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 19, PMC, 25 Aug 60.

[21] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, J.E. Keyton, Vice Chair Vice Chiefs of Staff Ctee, 22 Nov 61.

[22] NA, RG 24, 83-84/167, Box 7719, 20-1-1, pt 22, MGen J.P.E. Bernatchez, VCGS, to Sec Vice Chiefs of Staff Ctee, 6 Dec 61.

[23] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 23, MGen W.A.B. Anderson, AG, to Distribution, 4 Oct 62.

[24] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 23, Chair DRB to Sec PMC, 9 Oct 62.

was not enough, and a few months later Commander R.I. Goddard of the Chief of Naval Personnel's office warned that, after reviewing the situation, "the RCN cannot, because of the current intensive training programme and other commitments provide men for the current series of experiments" at DRML. He added, "It has also been determined that the RCN will not be in a position to participate in this programme until at least 1964,"[25] a full year later.

If finding volunteers to act as human guinea pigs in experiments was proving difficult, such was not the case when it came to using entire units to test procedures as part of their annual training, especially if simulants were used in lieu of chemical agents. One to undergo such testing was No 1 Medical Support Unit, which participated in Exercise Vacuum in the fall of 1968. This series of manoeuvres was "a field chemical warfare (CW) trial and evaluation conducted by 1 Combat Group at the Defence Research Establishment Suffield (DRES) from 16 Sep to 05 Oct 68," the unit providing a clearing section, two ambulance sections, and a sick bay/medical inspection room. "From this unit[']s point of view Exercise Vacuum was one of the most enlightening exercises that this unit has participated in," one important discovery being that

> The proposed establishment for a Combat Medical Unit proved to be entirely inadequate for its proposed role. With the number of personnel available, it was found that each person was required to do a minimum of three jobs, e.g. driver, gas sentry, litter bearer, the sub-unit became inoperable under a light casualty load (25 casualties/24 hours) in under 48 hours. Since there is no reserve in a Combat Medical Unit, a new unit or an increased establishment are needed[26]

in a chemical warfare environment. It was exactly the kind of lesson operational research was supposed to unearth.

Testing continued into the 1970s and beyond, Defence Research Establishment Suffield allocating some of its resources to the development of masks and clothing—as well as processes—to provide some form of barrier between the individual and a likely-fatal chemical environment. "Program 26," as it was called, was described in the early 1970s as

> providing physical and medical defences against chemical attack. In the present fiscal year [1971-72] certain procedures for treatment of casualties caused by chemical agents, and of care of casualties of all types under conditions of chemical warfare, have been tested under field conditions. The information generated in the program is being applied by

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[25] NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 23, Cdr R.I. Goddard, Sec CNP, to Sec PMC, 31 Jan 63.

[26] NA, RG 24, 83-84/167, Box 7826, 2-6100-2, Maj R.J. Slavik, CO 1 Med Support Unit, to SG, 2 Dec 68.

> the CF [Canadian Forces] in preparing standing operating procedures for personal and formation passive defence against chemical attack. Instructional systems and devices are being developed and tested, intended for providing more efficient training in passive defensive procedures, with considerable success... Results from this research program materially assist in improving passive defence capability of the CF against chemical attack; considerable advances have been achieved, particularly in providing information upon which improvements in operating procedures for medical units can be based, and in means for providing realism in training.[27]

Chemical warfare was, of course, only one area of research to interest the armed services, and there was no lack of work to be done on other topics; one example was the Arctic, tentative plans for investigations in Canada's northern areas being broached in 1947. Alan H. Woodcock, who was keen on such work, quickly made headway in getting the armed services interested, with research deemed worthwhile in such subjects as clothing and general equipment, medical and physiological research, fuels, oils and lubricants, snow measurements and the control of drifting snow, permafrost, and refrigerated space. Topics of great interest in summertime included the control and study of mosquitoes and insect pests as well as a scientific examination of muskeg and vegetation. Such research, according to Woodcock, would require a team of six scientists and six support staff, and questions that interested him included the following: "Is there any acclimatization to cold? Does a damp skin have a higher thermal conductivity than a dry one? Why do men tire so rapidly marching in the cold? Is there a lack of mental awareness in extreme cold and loss of efficiency; if so to what is it due?"[28]

An excellent sign of Woodcock's success in generating interest was the creation of a panel on Arctic Medical Research. The panel had three main tasks. First, to "draw to the attention of the Arctic Research Advisory Committee and the Medical Research Advisory Committee all advances in arctic medical research pertinent to the defence programme, and suggest lines upon which investigation might appropriately be conducted." Second, it was to "review the progress of arctic medical research projects of the Board and of the Services and report on them to the Arctic Research and Medical Research Advisory Committee." Finally, it was to "act as an authoritative advisory body to the Arctic Research Advisory Committee in the field of arctic medical research."[29] Among its first members were professors at Laval, Queen's, the Univer-

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27. NA, RG 24, Acc 90-91/217, Box 5, DRBC 100-21-31/0, W.G. Steward, for DG, to Chair DRB, 2 Jun 72.
28. NA, RG 24, Acc 83-84/167, Box 7567, 9500-90, Alan H. Woodcock to O.M. Solandt, 25 Feb 47.
29. NA, RG 24, v.4129, 4-78-53, Chair DRB to Dr A.C. Burton, Dept Med Res University of Western Ontario, 5 Aug 48.

sity of Western Ontario, and the University of Toronto.[30] The level of support for Arctic research in this period was even more clearly demonstrated by the establishment of a research laboratory at Fort Churchill, Manitoba, on Hudson's Bay, as described in a 1955 annual report on work in the Arctic:

> This station has a small permanent staff, and acts as a base for visiting research workers from other DRB establishments, government agencies, and universities. In the past, the main emphasis has necessarily been on the provision of facilities; but it is now adequately equipped to undertake active research in many fields, and a program of research is well in hand. Research in the North is necessarily expensive, and it is not intended to undertake at Churchill any projects, except those requiring northern conditions, that cannot be carried out in the more settled parts of the country.[31]

Most of the work conducted was geological and navigational in scope, although some projects were clearly intended to clarify health issues. One project on the "Source of Trichinosis for Marine Mammals," determined that "Trichinosis is very prevalent in the Canadian Arctic and might at times prove a serious problem for personnel living and working there." Another project investigated the "Intensity of Ultra-violet in the Arctic," since "A condition of the eyes known as snow blindness is said to occur at certain times of the year in the Arctic. This is believed to be due to the ultra-violet portion of the radiation energy reaching the earth from the sun. Systematic measurements of ultra-violet light reflected from the ground at Churchill are being made," to shed light on the issue.[32] Both projects, in fact, were extramural in nature, as they were conducted by university researchers rather than by members of the Defence Research Board. Part of a granting process, they exemplified programmes by which most medical research in the Arctic was conducted by people who were not members of the armed services. Of seven grants for Arctic research allocated in 1956, for example, one was to the University of Toronto for ongoing work on trichinosis, another was to the University of Manitoba to study medical problems generally, and a third went to Queen's University for physiological research. There was also another programme funded by DRB by which an institution, the University of Manitoba for example, could receive money to operate an "arctic research unit." In running Fort Churchill and providing money for the other programmes mentioned above, the Board could in fact boast that it was "the only Canadian organization supporting these studies at the present time."[33]

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[30] NA, RG 24, v.4129, 4-78-53, Names and Addresses of Members of the Arctic Medical Research Panel, 17 Jan 49.

[31] NA, RG 24, v.17,755, 811-100-74/34, Annual Report on the Progress of Arctic Research, Sep 55.

[32] NA, RG 24, v.17,755, 811-100-74/34, Annual Report on the Progress of Arctic Research, Sep 55.

As in all their endeavours, the Defence Research Board and other armed services institutions studying medical issues attempted to keep abreast of work already done in their varied fields. One example of how such an approach could lead down unforeseen paths was the issue of resuscitating a patient who had been subjected to extreme cold, by, say, falling through the ice. In early 1949 M.G. Whillans, the Secretary of the Panel on Arctic Medical Research, contacted professors at McGill, the University of Montreal, the University of Toronto, the University of Alberta, and Queen's, to ask what procedures were in place in their attached hospitals or in nearby medical institutions. After having perused the replies Whillans concluded, "It is noteworthy that the same lack of experience with this type of patient has been reported by all the hospitals we queried, even those in regions famous for cold weather."[34] However, a series of experiments had been conducted by a man named Rascher at the Dachau concentration camp in which victims were chilled, many until they died, others to a point where resuscitation could still be attempted. At the time the research was intended to benefit members of the Luftwaffe who were rescued from the North Sea; however, its use now was obviously fraught with ethical dilemma.

One who could enlighten Whillans on the reliability of such experiments was Leo Alexander of Boston, who had worked on the war crimes' trials that had followed the allied victory in the Second World War. His conclusion, after interviewing an assistant named Neff, was that "Rascher did not report his work reliably for reasons inherent in the totalitarian system, as he kept out of his reports those cases who took longer than 100 minutes to kill, especially some well nourished Russian officers, who did not die until after 5 to 7 hours exposure." A Dr Watson, whom Alexander had recently run into, reached, independently, the same conclusion: "Rascher obviously did it to make his experiments appear more similar to the known survival times in the North Sea. He was an unreliable fellow, and his associates referred to the faking of a chart as the "Raschering" of a chart. He dressed up graphs to make them look spectacular. I understand that the excellent correlation between blood sugar and body temperature is likewise dressed up."[35] The ethical issue was further clarified by Alan C. Burton in a paper presented to the Royal Society of Canada; he suggested that "In my opinion, the very inhumanity of the experimenters makes the scientific credibility of their

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33. NA, RG 24, Acc 83-84/167, Box 7567, 9500-90, Office of the Chair DRB to CDRB, 14 Feb 58
34. NA, RG 24, v.4129, 4-78-53, M.G. Whillans to J.S.L. Browne, 22 Feb 49.
35. NA, RG 24, v.4129, 4-78-53, Leo Alexander, Boston, to Morley Whillans, 18 Mar 49.

reported results highly suspect."[36] He doubted that an individual lacking in humanitarian scruples could somehow conduct research according to rigid scientific method, with its emphasis on the conscientious adherence to protocols.

The Arctic was, of course, not the only area of interest to the armed services, nor did every research project present the same ethical issues as exposure to cold. More mundane was the investigation of nutrition, the Inter-Service Medical Committee recommending in 1954 that the Defence Research Board "undertake a study of the nutritional value and adequacy of current rations served in the Navy, Army and Air Force establishments." The survey, already having been approved by the Joint Services Food and Nutrition Committee, would require a DRB scientist, a graduate dietitian with knowledge of providing food to armed forces, a junior officer or senior non-commissioned officer with experience in food preparation, and two non-commissioned officers or equivalent who had preferably been trained as biochemical technicians.[37] One reason for the study was to gather data for mobilization planning,[38] and it would be based on a maximum of six surveys a year: "Each survey will cover feeding from two single-line kitchens... It is thought that approximately 4 weeks will be spent at each service establishment collecting data," requiring a total of 48 weeks per year over a three-year period.[39] The Office of the Minister of National Defence was not, however, suitably impressed, responding that "If any survey having to do with the armed forces would take three years to complete then it is the wrong kind of survey."[40] A one-year study was substituted.

Another research study ten years later, was "The Preservation of Red Blood Cells by Freezing," initiated by John R. Jackson. He proposed to establish a bank of frozen blood at the National Defence Medical Centre using a preservative called dimethyl-sulfoxide in what was called the Huggins technique. One objective of the research was "to show that blood frozen and reconstituted according to the Huggins technique is a safe and effective product in our hands..." Another goal was "To study the feasibility of transporting the blood, either frozen or reconstituted, for use in isolated areas, in battle, or disaster, with modification of the technique or apparatus as might be indicated." Also, the research sought "To study the feasibility of training field personnel of the Armed Forces in the technique of the process," and, finally, "To develop a bank of rare bloods for use in clinical emergencies." The whole was justified by the possibility that "A practical method for the long term preservation of blood would eliminate wastage due to outdating, and in time of disaster would ensure a supply of blood which might otherwise be lacking, or which might create a serious transportation problem."[41]

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[36] NA, RG 24, v 4129, 4-78-53, Alan C. Burton, "Resuscitation from Severe Hypothermia, with Particular Reference to the Work of German Scientists, Paper presented to the Royal Society of Canada," 7 Jun 49.

[37] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, D.G. Thacker, Med Section for Chair DRB, to Sec ISMC, 11 Feb 54.

[38] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, FO G.D. Manderson, Sec ISMC, to Sec PMC, 26 Feb 54.

[39] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, D.G. Thacker, Med Section for Chair DRB, to Sec ISMC, 5 Mar 54.

[40] NA, RG 24, 83-84/167, Box 7718, 20-1-1, pt 6, Office of the Minister of National Defence to PMC, 23 Mar 54.

His 1964 grant application having been approved, Jackson went to work, and by October 1965 "twenty three units of blood frozen for periods varying from one to one hundred and one days have been administered. Clinical response has been good, there have been no unfavourable reactions... It is expected that by 31 Mar 1966 at least fifty units will have been administered with detailed study and follow-up of the patients."[42] Work continued in the years that followed, 100 units having been administered by November 1966 and 160 by October 1967. By early 1970, the research having borne some fruit, Colonel W.J. Wills, who had taken over the project, requested money "To continue training of Military and Civilian (Red Cross) technicians in the Huggins procedure" as well as to pursue other avenues, such as the investigation of various substances "as an emergency blood replacement fluid in humans." Other goals would be "To operate in conjunction with the Canadian Red Cross the Canadian National Rare Blood bank established at National Defence Medical Centre," and "To stockpile non rare blood for medical emergency and cardiac and other major elective surgical procedures at National Defence Medical Centre..."[43] In 1972 and 1973 the programme ceased to be a DND responsibility, being turned over to civilian agencies, namely the Canadian Red Cross, which "acknowledges the contributions made by the above institutions and personnel in the maintenance of its bank of rare bloods." These appeared in World Health Organization listings as "available in the frozen state."[44]

Research on blood was straightforward—if somewhat complex—but such was not the case when Canadians worked in murkier areas, such

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41. NA, RG 24, v.24,062, 9350-18, John R. Jackson, Application for Grant in Aid of Research, 18 Nov 64.
42. NA, RG 24, v.24,062, 9350-18, John R. Jackson, Application for Grant in Aid of Research, 18 Oct 65.
43. NA, RG 24, v.24,062, 9350-18, Col W.J. Wills, Application for Grant in Aid of Research, 18 Jan 70.
44. NA, RG 24, v.24,062, 9350-18, R. Perrault, MD, to Ronald Lowe, Exec Sec University Grants DRB, 20 Jun 73.

as the human mind. Since the First World War, it had been known that military operations entailed psychological as well as physical casualties, but there was far less understanding of the former; most medical practitioners would have been far more comfortable treating a soldier with a gunshot wound than one suffering from paralysis of unknown cause. Still, the problem could not be ignored, and through the Second World War and, as we have seen, Korea, psychiatrists and psychologists were part of the Canadian military's medical system; a Panel of Psychiatry of the Medical Advisory Committee to the Defence Research Board had been set up in the early 1950s. Its mandate went further than to examine battle exhaustion, and according to an early report, its interests included "a carefully planned study of selection procedures, of methods of changing individuals [sic] motivation and of treatment and rehabilitation in the psychiatric and psychological fields."[45]

Much of the work would be conducted through extramural grants, and by 1948 research topics included the selection of personnel to serve in the Arctic, psychological aspects of acclimatization to conditions in the north, the effect of rigorous winter conditions on soldier performance, interpersonal relations in small isolated arctic groups, the psychological analysis of morale, the development of intelligence, the role of the divisional system for welfare and morale in the Royal Canadian Navy, a quantitative evaluation of emotional security, an appraisal of the intelligence of service personnel, and more.[46] The field thrived, and there were 45 applications for grants to the committee on experimental psychology in 1963,[47] with 100 to the National Research Council for similar research two years later.[48] Various divisions within government were therefore involved, not just the armed services, making the 1950s and '60s something of a peak period for the field.

Just about any topic could receive funding, which would lead to no little soul-searching later on, since one issue to undergo detailed study, including human experimentation, was brainwashing. The genesis of DND's role in such work was a meeting in June 1951 attended by Sir Henry Tizard (a well-respected British scientist and consultant), representatives of the Central Intelligence Agency, Dr D.O. Hebb of McGill, and O.M. Solandt, head of the Defence Research Board at the time, who could be considered the *doyen* of operational research. According to the latter, "The discussion concerned the desirability of basic research on the means which might be employed by totalitarian governments for effecting fundamental changes in the attitudes of persons from free nations who temporarily fall within their control," Chinese success in converting to their cause American and British prisoners captured in Korea obviously uppermost in these men's minds: "It was thought that if we knew more about what was possible, any remedy or safeguard which we should use would suggest itself more readily."[49]

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[45] NA, RG 24, Acc 83-84/216, Box 2492, HQ 801-M91, Psychiatric Research under the aegis of the Panel of Psychiatry of the Medical Advisory Committee to Defence Research Board, nd.

[46] NA, RG 24, v.5250, 19-73-5, W.H. Barton, Sec Standing Ctee on Extra-Mural Grants, to Ctee, 8 Mar 48.

[47] NA, RG 24, Acc 83-84/167, Box 7355, 170-80/A70, Dalbir Bindra, Chair Associate Ctee on Experimental Psy, to Members, 30 Jan 63.

[48] NA, RG 24, Acc 83-84/167, Box 7355, 170-80/A70, Dalbir Bindra to Members of the Associate Ctee on Experimental Psy, 19 Feb 65.

As we shall see, one of the participants at that meeting, D.O. Hebb, would receive National Defence funding to look into the matter, but there were others who might shed light on the murky world of brainwashing, and not all of them received the nod from the armed services. One who would later become notorious was Ewen Cameron, and his failure to get DND support is an interesting part of this story. Certainly he had known a certain modicum of success in the past, having received money to look into fear and anxiety during community disaster and further funds to investigate the adaptation of "white men" to the Arctic. According to an investigation thirty years later, however, Solandt, then head of the Defence Research Board, "ensured that Cameron made no applications to the DRB for work in the area of psychiatric research dealing with patients." The reason says something about the system for providing grant money; Solandt "had a close colleague whose wife became a patient of Cameron and underwent the depatterning procedure," which involved techniques akin to brainwashing such as sensory deprivation, the use of LSD and other drugs, and listening to audio tapes repeating the same sentences for hour after hour. The treatment was not successful:

> After a year, Cameron simply sent her back home and advised in a rather peremptory way that he could do no more for her. Dr Solandt and his colleague inferred from Cameron's report that he had depatterned the patient and was not able to repattern her. Dr Solandt became sceptical of the efficiency of Dr Cameron's methods and indeed formed the opinion that he was not possessed of the necessary sense of humanity to be regarded as a good doctor.

According to an investigator, George Cooper, Solandt let it be known through Dr W.N. Morton, the Director of Biological Research, that the head of DRB would not look favourably upon any application Cameron might make for research funding.[50]

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[49] *Opinion of George Cooper, QC, Regarding Canadian Government Funding of the Allan Memorial Institute in the 1950s and 1960s* (Minister of Supply and Services Canada, 1986), Appx 23, O.M. Solandt, Chair DRB, to Minister, 25 Jan 54.

[50] *Opinion of George Cooper*, 37, 38, 76-77.

There may have been other reasons involving empire-building and competition,[51] but Solandt's mention of the effect of Cameron's work on at least some of his patients is an obvious parallel with Allan C. Burton's comments on the chilling experiments at Dachau. Solandt was not the only one to harbour doubts about Cameron's methods. Dr F.C. Rhodes Chalke, a psychiatrist who worked with the DRB at the time and later became president of the Canadian Psychiatry Association, had similar concerns: "He was asked, by the family, to take as a patient the widow of a former medical colleague, after she had been unsuccessfully given the depatterning treatment by Dr Cameron. Chalke attempted to treat her for severe depression, and this experience gave rise to doubts on his part."[52] Neither Solandt nor Chalke voiced his concerns publicly, however, since at the time the whole issue of medical ethics was deemed to be a matter between the individual practitioner and his or her conscience. Somewhat ironically, Cameron had been on the staff of the International Military Tribunal at Nuremberg and had helped draft what later became known as the Nuremberg Code. It stated that before one could perform human experimentation, "The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, overreaching or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the subject matter involved as to enable him to make an understanding and enlightened decision."[53]

Still, as Frederic Grumberg of the University of Montreal explained, experimenting on one's patients was considered acceptable if one did no harm, and Cameron honestly believed his work was benefiting his subjects.[54] In fact, the consent form his patients (or their relatives) signed was for "examination and treatments" and did not mention experimentation at all.[55] The need for oversight was for a later age, and it was thus in perfect keeping with the mores of the times that although regulations for grant applications to the Defence Research Board covered such issues as accountability, publications, and patenting, ethics were never mentioned.[56] Cameron therefore suffered from the misfortune of having Solandt come into contact with one of his patients, but he managed to get funding from the Department of Health and Welfare and the CIA (the latter by circumventing agreements between Canada and the US), and so continued his work.[57] It would all end badly, however, in broken minds, lawsuits, public denunciations, and Cameron's mysterious death (possibly by suicide) while mountain-climbing.

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[51] Anne Collins, *In the Sleep Room: The Story of the CIA Brainwashing Experiments in Canada* (Toronto, 1997), 117.

[52] *Opinion of George Cooper*, 82.

[53] Don Gillmor, *I Swear by Apollo: Dr Ewen Cameron and the CIA Brainwashing Experiments* (Montreal, 1987), 25.

[54] *Opinion of George Cooper*, Appx 4, Frederic Grumberg, U de Montreal, Report to George T.H. Cooper, Dec 85.

[55] Harvey Weinstein, *Father, Son and CIA* (Halifax, 1990), 35.

[56] NA, RG 24, v.4117, 2-1-87-56, Defence Research Board, Application for a Grant for Research, 4 Dec 47.

D.O. Hebb's work followed a rather different path, becoming something of a classic in Canadian psychological research. In *Textbook of Psychology*, he observed, "The extent to which we are dependent on our normally varied environment and the mental activity it gives rise to is seen in perception-isolation experiments," which received DRB funding in the early 1950s. In these experiments, "College students were paid $20 a day to do nothing, lying on a comfortable bed with eyes covered by translucent plastic (permitting light to enter, but preventing pattern vision), hands enclosed in tubes (so that the hands could not be used for somesthetic perception, though they could be moved to prevent joint pains), and ears covered with earphones from which there was a constant buzzing except when the subject was being given a test." Conditions were, of course, relaxed to allow the volunteer to eat or use the rest room. Still, in a parallel with the spaceflight experiments already discussed, "Few could stand the monotony for more than two or three days, the upper limit being six. The subjects became willing to listen to childish or meaningless talk that otherwise they would have avoided contemptuously—anything to break the monotony. Eventually the need became overwhelming to see, to hear, to be in normal contact with the environment, to be *active*. Nothing like the same pressure develops when a subject is equally immobilized (with a broken leg, say) but has books, radio and friends to keep him occupied mentally. The need thus is more for mental than for physical activity."[58]

The experiment showed that without normal sensory stimulation, "mental function and personality deteriorate. The subjects in isolation complained of being unable to think coherently, they became less able to solve simple problems, and they began to have hallucinations. Some of them saw such things as rows of little yellow men wearing black caps, squirrels marching with sacks over their shoulders, or prehistoric animals in the jungle. These scenes were described as like animated cartoons. More fundamentally disturbing were somesthetic hallucinations, when the subject perceived two bodies somesthetically or felt as if his head was detached from his body; closely related to this was 'a feeling of bodily strangeness," or a feeling that the mind was detached from the body. The subjects' very identity had begun to disintegrate."[59] It was classic brainwashing, or would have been had it been pressed further. It was not, and in fact six potential subjects refused to even begin once the experiment was explained to them, while four others gave up after a period of time, explaining that it felt like a form of torture. No one lasted more than 131 hours, far less than the 30 to 60 days prisoners had been subjected to after capture in Korea. In addition to providing insight into the mechanisms of brainwashing, Hebb's experiments were also deemed helpful in studying intellectual function "on isolated outpost duty," and "the problem of the inattention of the man watching a radar screen."[60]

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[57] Don Gillmor, 154.

[58] D.O. Hebb, *Textbook of Psychology* (Philadelphia, 1972), 212-213.

In the end, brainwashing turned out to be something of a sideline, but this was not the case with battle exhaustion, which by the mid-1960s was as much of a mystery as it had been during the Second World War. As W.B. Snarr reported on what at the time was called battlefield stress,

> It is generally accepted that the behaviour of troops during combat is likely to differ from that during trials, experiments, and exercises which have been devised as an aid in predicting combat performance of weapon systems, sub-units, units, and formations. There are very few data available to clarify in quantitative terms what this change is likely to be in any particular facet of the soldier's task—nor even to predict whether an improvement or a degradation in overall performance can be expected.

Studying the lessons of history might be fruitful, but Snarr warned that "Historical combat data are never detailed and are rarely quantitative," that "Those events which are recorded in detail tend to be unusual, e.g. decorations recommendations," and that "There are rarely sufficient data on wartime equipment performance parameters to determine what the corresponding field experiment or exercise performance should have been." As for studying current combat operations, "This is extremely difficult to do without influencing the operation, and besides the Canadian Army is not engaged nor is likely to be engaged in Combat operations of sufficient duration to set up such research."[61]

Snarr was not alone in his pessimism, and it seemed that it was far easier to determine how battle exhaustion could *not* be studied than how experiments could be designed to look into it. Another analyst, W.F. Cockburn, related how many battlefield stress factors could be or already had been investigated, such as exhaustion, lack of sleep, boredom, discomfort, noise, smoke, and others, but "This would not be a popular project with the subjects!" should experiments be carried out. He noted, "Quite a lot has been done in the UK and US, including the imposition of real psychological stress by introducing a situation which apparently poses a real threat to life and limb, but is in fact under the control of the experimenter," though, obviously, informed consent could not be obtained for such work.[62] As the Chief Superintendent for the Defence Research Medical Laboratories pointed out,

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[59] D.O. Hebb, 213.

[60] *Opinion of George Cooper*, Appx 22, D.O. Hebb, W. Heron, and W.H. Bexton, Annual Report Contract DRB X38, nd.

[61] NA, RG 24, Acc 83-84/167, Box 7559, 9400-1, W.B. Snarr, Battlefield Stress, nd.

> The moral implication of putting men in such a situation and then generating a crisis so that some deserted their post is, in our opinion, unforgivable. The men who disobeyed orders and deserted their post cannot be accused of cowardice because the whole situation was designed to make them vulnerable. Telling them that it was all a joke does not relieve them of their own personal knowledge that they ran. It is certain that years later some of these men will still feel shame at their behaviour, and all for what?

For the time being, at least, more mundane research on such things as the impact of noise on performance would have to do.[63]

Such warnings, however, even if taken to heart, allowed much scope for psychological investigations. In 1970, for example, Walter D. Fenz of the University of Waterloo proposed research to test the hypothesis that "Anxiety must be mastered in small doses for adequate controls to be established." Work in the area had been conducted since 1958, and for the tests in question he and his staff would follow an experimental group of fifteen civilian parachutists and a control group of the same number as they underwent their first 20 jumps. The grant, of $8,000, was closed out in 1972.[64] What limited documentation remains seems to indicate that the hypothesis was borne out.

The focus of the armed services was, in fact, on a wide variety of phenomena. Of all such research aviation medicine generated perhaps the most interest, and the fact that it was international in scope may have had a part to play in the allocation of resources. One source of information was the annual meeting of the Aero-Medical Association, Dr J.W. Pearce of the DRB's Panel on Aviation Medicine commenting on one 1955 session that it "was attended by representatives of most United Nations members, and was unusually stimulating and informative." Subject material was varied, being grouped under such headings as "Special Problems of Very High Altitude Flight," "Advances in A/C [aircraft] Instrument Display and Design of Controls," "Crash Injury

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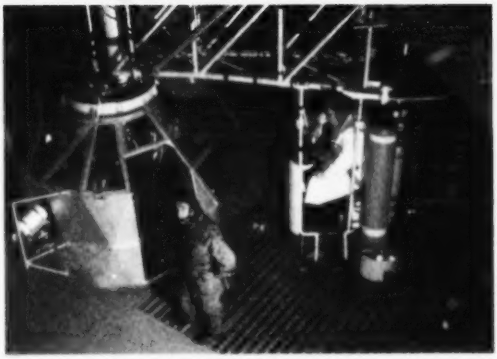
[62] NA, RG 24, Acc 83-84/167, Box 7559, 9400-1, W.F. Cockburn to Mr Watson, 7 Aug 64.

[63] NA, RG 24, Acc 83-84/167, Box 7559, 9400-1, Chief Superintendent DRML to CDRB, 20 Jan 65.

[64] NA, RG 24, v.24,064, DRB 9401-54, Walter D. Fenz, Effects of Subjective and Objective Certainty on Mastery of Stress, Application for Grant, 30 Oct 70.



Experiments being conducted at the Institute of Aviation Medicine, 1967. Canadian Forces Joint Imagery Centre, PCN 67-261.

Research and Pilot Ejection Devices," "Assessment of Pilot Fitness and Studies of Factors Affecting Pilot Performance," and "Specific Aviation Health Hazards and Prevention: Health of Airline Pilots." All in all, "attendance by representatives of the DRB Panel on Aviation Medicine was very worthwhile... the orientation in this wide and important field of medicine was indeed valuable."[65]

Eight years later, however, N.J.B. Wiggin, Chief Superintendent of Defence Research Medical Laboratories, warned that "No one from DRML will be attending the Aerospace Medical Association Meeting in Los Angeles," and, in explanation, quoted from a letter to the Canadian Joint Staff (or CJS) in Washington: "DRML personnel have attended and participated in various Aerospace Medical Meetings over a period of years and I attended the meeting in Miami several years ago. Our collective impression is that the scientific value of the Aerospace Medical Association Meetings is marginal and this year's is certainly not sufficient to justify the expenditure or the amount of time, effort and money required to present either a scientific paper or a scientific exhibit in Los Angeles. This is particularly true in view of current financial restrictions."[66] However, the junior service came to the rescue, and a more positive-minded colleague of Wiggin's reported that "The availability of an RCAF Comet to take a number of Canadians to Los Angeles and back afforded an opportunity to attend an interesting meeting without undue travel expense for DRB." Five attended from Defence Research

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[65] NA, RG 24, 90-91/217, Box 28, 120-A17, Report on 1955 Annual Meeting of Aero-Medical Association, Mar 55.

[66] NA, RG 24, 90-91/217, Box 28, 120-A17, N.J.B. Wiggin, Chief Superintendent Defence Research Med Labs, to CDRB, 24 Jan 63.

Board, and though "The annual meetings of this association are not noted for their scientific quality," since "they are attended by many of the leading American scientists in the field the meetings are often quite valuable because of informal discussions."[67]

While trying to keep in touch with aviation medical research in other countries, investigators were also busy with their own projects in Canada. The Institute of Aviation Medicine's 1958-59 report, for example, included such headings as Aerophysiology, Respiratory, and High Altitude Physiology, and such projects as "Further studies of cabin pressure loss in high altitude passenger aircraft. This has included ... A more precise estimation of the time of useful consciousness at 40,000 ft." Other research was described as "Attempting to determine how soon oxygen has to be given to prevent any impairment of consciousness," "A study of the effects of any emergency descent from 40,000 ft without supplementary oxygen, on monkeys," "A similar limited study of humans, taking arterial blood for oxygen saturation and electrolyte studies," "A similar limited study on pregnant monkeys because of two miscarriages following these exposures," "An evaluation of available passenger masks and suggested oxygen flows on subjects donning the masks at 40,000 ft," "Development work and trials of an over-the-head bag for passenger use during an emergency," and "The production of a film on this work."[68]

The Institute also carried out "studies on partial pressure suits" including "the development, testing and training of subjects" to use equipment "in CF100 up to 50,000 ft." and on "the ability of aircrew to recognize hypoxia when it is induced without their knowledge." The institute also ran "The normal routine of lectures and training to aircrew and medical officers." The list went on, the decompression chamber having been used for 322 simulated ascents to high altitude that year while researchers also conducted "Investigations and testing of oxygen system components removed from aircraft following air incidents." Main headings, which could incorporate a half-dozen projects each, included "Climactic," "Protective Equipment," "Biosciences," and "Human Engineering." For the latter, "Cockpit workspace design studies have been carried out on the CC106 [the Yukon, a passenger and cargo aircraft] and on the flight engineers station of the Argus [a patrol aircraft]. Specific instrument presentations have been evaluated. Studies have been planned to determine the effect of workspace design on

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67. NA, RG 24, 90-91/217, Box 28, 120-A17, MG Whillans, Travel Report, Annual Meeting of Aerospace Medical Association, Los Angeles, 8 May 63.
68. NA, RG 24, 83-84/167, Box 7853, 2-6160-2670, Annual Report of IAM Activities to DRB Panel on Aviation Medicine, 5-6 Jun 59.

various items of flying clothing including pressure suits under climactic and pressurization stress."[69]

One of those involved in such research was Wilbur Franks. Having helped develop anti-G suits to prevent pilot blackout in the 1930s and 1940s, he was still hard at work twenty years later, and

> In 1956 he received international recognition for a brilliant piece of research work on the chemistry of body tissue metabolism under reduced oxygen tensions... crash investigators will now have information available to them as to the oxygen status of the pilot prior to his death. Many heretofore unexplained fatal crashes can now be definitely credited to defective oxygen supply. This has far reaching implications in the flight safety field both in military and civilian aviation.

As for the test itself, "it is based on the detection and estimation of lactic acid in brain tissue. As lactic acid production increases under conditions of low oxygen tension, it will be seen that the diagnosis of hypoxia may be made quantitatively with accuracy at postmortems."[70]

Another researcher exemplifying the kind of work being conducted in the 1950s and 1960s was Wilson George Leach, who eventually rose to the rank of Major-General:

> As project officer in the respiratory physiology section, Squadron Leader Leach progressed through various departments until he was promoted to Wing Commander in 1961 and appointed Officer Commanding the Flying Personnel Medical Establishment. His work was primarily directed towards the protection of aircrew from the hazards of their hostile environment. This included such things as research on oxygen equipment, escape devices, survival equipment, the man-machine interface,

to use a later expression, "and performance under adverse environmental conditions." With the development of the Avro CF-105 Arrow fighter aircraft, research was being done on "partial breathing equipment to counteract the effects of loss of cabin pressure at extremely high altitudes. Out of these experiments, techniques and procedures were devised for rapid decompression trials to be conducted in the high altitude decompression chamber. This chamber, which can simulate conditions at very high altitudes, was used to produce the effects of a sudden loss of pressurization similar to that which might occur if a pressurized aircraft at high altitude suffered equipment failure or a rupture of the aircraft's fuselage. The experiments included trials with both RCAF and civilian flying personnel,"[71] with Leach sometimes using himself as a test subject. According to his citation for the McKee Trophy, presented for contributions to aviation,

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[69] NA, RG 24, 83-84/167, Box 7853, 2-6160-2670, Annual Report of IAM Activities to DRB Panel on Aviation Medicine, 5-6 Jun 59.

[70] Harold M. Wright, *Salute to the Air Force Medical Branch on the 75th Anniversary, Royal Canadian Air Force* (Ottawa, 1999), 47.

[71] Harold M. Wright, 18.

> Leach continually exposed himself to explosive decompression and periods of anoxia at high atmospheric altitudes despite the fact that no observations had ever been made which recorded the effects of such exposure. The personal courage he displayed in the pursuit of his research was beyond the call of duty, and has resulted in greater safety for people the world over who fly in high altitude aircraft.[72]

There was thus no lack of work for those wishing to conduct primary research in the first half of the Cold War, but in 1962 the Canadian dollar dropped over five cents vis-à-vis the American greenback, an occasion for much hand-wringing in that era: "To restore confidence in the dollar the government thought it should also announce an "austerity program","[73] and defence spending fell from over 36 per cent of the federal budget in 1956-57 to 24 per cent in 1963; defence research became a luxury of a past "Golden Age." In fact, the Defence Research Board itself would be dismantled in the early 1970s, and never again would basic scientific work be considered of equal status to the fighting services. Research was not halted entirely, however, and some of it would bear fruit at the time of the Gulf War.

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72. Harold M. Wright, 19.
73. Robert Bothwell et al, *Canada since 1945: Power, Politics, and Provincialism* (Toronto, 1981), 228.

Chapter Seven

International Intervention

As we saw in the previous chapter, basic medical research was somewhat de-emphasized, along with scientific research generally, in the course of the 1970s, but other endeavours followed a different course. The most obvious related to operations overseas. Korea was only the largest of Canada's post-war deployments. Although Canada did not go to war again until 1991, military medical practitioners were involved in a wide variety of peacekeeping, observer, and humanitarian relief missions. The first was in the 1940s, in the Middle East and Kashmir; Canada's armed services took on further responsibilities in the 1950s, notably in Indochina and on the cease-fire line between Egypt and Israel. The main medical challenge in all of these was a combination of preventive medicine and basic health care, although as we shall see surgery was often on the agenda. It was difficult enough, given that almost every region in the world was a possible site for deployment, and given the existence of parasites and other disease vectors some of which remain a mystery to this day.

The mission to south-east Asia in the 1950s was an excellent example. Canada participated in the International Commission of Control and Supervision observing the situation in Laos, Cambodia, and the two Vietnams following French decolonization of the area. According to G.W.L. Nicholson in his history of the medical corps, "It was a task carried out in an environment and climate which combined to furnish the greatest test of preventive medicine that the Corps had ever been called upon to face." In general, the countries "had one thing in common—a very low standard of hygiene," a 1937 report listing malaria as the chief illness, with enteric diseases following close behind:

> epidemics of cholera, with a high incidence among the natives of leprosy, beriberi, typhoid fever, trachoma, pneumonia, and yaws. Injuries caused by heat "were not to be dismissed lightly," and other noteworthy ailments included diseases of the skin, typhus fever, dengue fever, relapsing

fever, filariasis, and infection with flukes and various helminths,

Preparing instruments, Vietnam, 1973. Canadian Forces Joint Imagery Centre, VN 73-300.

the last three scientific terms referring to various parasites. The Canadian Army's Deputy Director-General Medical Services, Colonel R.J. Nodwell, travelled to the area in 1954 to conduct a medical reconnaissance. Based on his report, the Director-General, Brigadier Hunter, drew up a plan that included a study of medical intelligence, a booklet on health precautions, the production of an individual hygiene and first-aid kit, the procurement of medical equipment and supplies, and a thorough briefing of personnel assigned to the mission.[1]

Half a world away, in the United Nations Emergency Force (UNEF) that was formed in 1956 to observe the cease-fire between Egypt and Israel, the medical challenge differed only in matters of detail. There, a detachment of 50 medical practitioners treated patients who mostly "were down with upper respiratory diseases, gastro-enteritis, and skin infections. Immunization against polio was a priority."[2] By 1960 the small group of medical practitioners numbered only 19, but continued to support UNEF, Major S.L. Symond, an officer with the Canadian Base Units Middle East, reporting early that year, "we have two medical assistants attached to 115 ATU [Air Transport Unit] at El Arish; L[ance] S[er]g[ean]t Michaud and P[riva]te Sims. The airport is situated 8 miles away from the living quarters at Marina Beach. One medical assistant takes ambulance duties at the airport during flying hours "daylight only" and the second medical assistant takes the sick parade at Marina Beach. They alternate employment. The sick parade at El Arish airport and Marina Beach is minimal most of the personnel being referred to CFMS Detachment. These two medical assistants have in fact very little to do but there seems to be no way around this situation because of geographical conditions."[3]

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1. G.W.L. Nicholson, *Seventy Years of Service: A History of the Royal Canadian Army Medical Corps* (Ottawa, 1977), 274-275.
2. G.W.L. Nicholson, 279-280.
3. NA, RG 24, 83-84/167, Box 7850, 2-6160-829/41, Maj S.L. Dymond, for CO Cdn Base Units Midde East, nd.

The detachment also ran a Medical Inspection Room Sick Bay, "on a shift basis, employing two corporals and one private medical assistant." Convoy duties, leave, "lost if not taken at 3 months interval," and welfare trips, however, "cause a constant juggling of duties: it would be very appreciated if the establishment could be increased by one medical assistant to facilitate efficient operation of the Sick Bay."[4] A further challenge was casualty evacuation, where getting those injured in the field to the UNEF hospital proved difficult, to say the least. As the Major related, "I have toured the Armistice Demarcation Line and International Frontier using two types of vehicles, reconnaissance jeeps 'converted 3/4 ton ambulance' and scout car. The terrain patrolled by the Recce Sq[uadro]n is one of the roughest I have ever seen... The Armistice Demarcation Line is nothing but a tract in Sand Dunes which go up to 50 feet in height sometimes with an incline varrying from 20 to 45 degrees: from that it will be understood that a man cannot be evacuated to UNEF Hospital from the farthest point patrolled by our Recce Sqn in less than 3 hours. The difficulties are then compounded if evacuation has to be carried out by night." An alternative was possible, since "I am told Army Headquarters authorities have advised that a UNEF Helicopter would be the instrument of choice for evacuating seriously wounded personnel from the Armistice Demarcation Line and International Frontier. I concur entirely with this view,"[5] and his logic was certainly difficult to deny.

In the months that followed, one issue succeeded another, so that in March Major G. Babineau, the Senior Canadian Medical Officer with UNEF, exclaimed that he "was somewhat flabbergasted on finding that Canadian personnel did not as a matter of routine receive a blood test prior to return to Canada," and that he "has taken steps to correct this oversight." In regards to water supply the situation was different, with "Victories' within grasp as "The 1960 UNEF Budget provides for new Engineering works for the Rafah Camp water supply. This should eventually bring the water contamination to a reasonable or acceptable level."[6] In June the issue of the day seemed to revolve around eyeglasses, 193 personnel found to be wearing them, though "there is some tardiness with respect to provision of spectacles prior to leaving Canada. In fact specific cases can be cited where individuals inquired about spectacles prior to coming here and were told... That spectacles are

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4. NA, RG 24, 83-84/167, Box 7850, 2-6160-829/41, Maj S.L. Dymond, for CO Cdn Base Units Midde East, nd.
5. NA, RG 24, 83-84/167, Box 7850, 2-6160-829/41, Maj S.L. Dymond, for CO Cdn Base Units Midde East, nd.
6. NA, RG 24, 83-84/167, Box 7850, 2-6160-829/41, Maj G. Babineau, Sr Cdn MO, to SG, 23 Apr 60.

easier to get in the Middle East ... That a second pair of spectacles is only issued to Congo Personnel," that is to say, Canadians serving in that central African country. Furthermore, "In a third instance, the individual was turned away by his own orderly room. These are illustrations of individuals seen in the last two weeks of June and includes one soldier who worked in a RCAMC MIR," or Medical Inspection Room, which should have known better. After several more paragraphs of detail, the report suggested that "Spectacles" be added to the Check Chart for personnel proceeding overseas or some other means be used to ensure personnel are better provided for with respect to spectacles."[7]

While such issues were being sorted out in Egypt, in 1960 Canada dispatched a Canadian signals unit to the Belgian Congo, its role to provide communications for UN forces attempting to bring calm and order to that war-torn country. As G.W.L. Nicholson related in his history of the Royal Canadian Army Medical Corps, "During the four years that the Canadians remained in Central Africa, a small RCAMC detachment (generally one officer and 3 or 4 medical attendants) played a significant role in maintaining the unit in good health. As had been the case in Indochina, the prevention of disease was stressed to each serviceman at all times. To this end the RCAMC placed emphasis on education, a close surveillance of the environment to determine possible sources of trouble, early diagnosis, and treatment of sickness and early evacuation." Malaria and gastro-enteritis were perhaps the biggest threats, but thankfully the rate of disease among Canadian soldiers was low, even though they served "in one of the less salubrious areas of the world."[8]

One early concern voiced by the Senior Medical Officer in August 1960, was venereal disease, which was believed to be elevated in the region. Out of a contingent numbering about 300, however, only 5 came down with the ailment in February 1961, none having been reported the previous month. In July, to give another typical example, 4 Canadians were diagnosed with one form or another of the disease, but less than a year later concern increased, with 7 new patients in May and the Medical Officer recommending a vigorous programme against it. There were no new diagnoses in June, but by then the rate of infection had reached almost 280 per 1,000 annually, the highest among UN contingents, with the Irish suffering over 226 per 1,000, followed by the Ethiopians, the Swedes, and the Norwegians. Austrian forces had the lowest rate of infection at less than 22 per 1,000. By September the campaign to prevent VD had incorporated "horror films' showing

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[7] NA, RG 24, 83-84/167, Box 7850, 2-6160-829/41, Monthly Progress Report, Jun 61.

[8] G.W.L. Nicholson, 281-282.

Health Care in Cyprus, 1974. Canadian Forces Joint Imagery Centre, CYPC 74-335.

in explicit detail the symptoms of gonorrhea, and in October 1962 the MO reported no new patients, with one in November, another in December, and three in January 1963. From then on there were only one or two per month, though four contracted the disease in March 1964 and four more in May.[9] For the Medical Officer, therefore, any success against the ailment required constant vigilance.

As the 1960s progressed, Canada's peacekeeping responsibilities increased, notably in Cyprus where independence brought civil war between Greek and Turkish ethnic communities and an observer force to keep an eye on the subsequent cease-fire. Arriving in the spring of 1964, Major G. Babineau reported that "The organization of the medical services went without much difficulty, the co-operation of the British Medical Services being excellent." His missive then went on to discuss such topics as the medical inspection room, the sick bay, hospitalization, casualty evacuation, medical supplies, personnel, the medical chain of command, medical documentation, hygiene, water supply, venereal disease, and sick parades, in short providing the same kind of information he would in wartime.[10]

Circumstances were such that dealing with routine also meant preparing for the worst, Brigadier A.J. Tedlie, the commander of the Nicosia Zone in Cyprus, noting rather grimly that "In the event of full scale fighting breaking out between the two communities in Cyprus the UN troops in Nicosia Zone would very likely be involved in at least the initial stages."[11] Of a total strength of 3,200 United Nations troops, casualties were expected to amount to about 5 per cent, with 10 per cent of those being fatal; that left 150 soldiers needing evacuation, 60 of them on stretchers. "Any evacuation plan must also cater for the removal of wounded Turkish and Greek Cypriot wounded," the Brigadier noted, while facilities available included a 48-bed Austrian field hospital, as well as various smaller units, the British Military Hospital in Dhekelia among them. As for ambulances, ten were available, including two with the Canadian contingent, while "Helicopters may be available for very serious patients but normal operational demands may restrict their availability for medical evacuation." All in all, he observed, "Based on estimated maximum requirements ... the resources available Nicosia Zone can deal adequately with any normal medical situation in the event of hostilities."[12]

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[9] NA, RG 24, v.18,842 to v.18,488, War Diary, Aug 60 to Jun 64.

[10] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/80, Maj G. Babineau, SMO Cdn Contingent UN Cyprus, to Army HQ, Apr 64.

[11] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/80, Brig A.J. Tedlie, Commander HQ Nicosia Zone, HQ Nicosia Zone Directive 6/64, 2 Aug 64.

Although operations in places like Indochina, Egypt, and Cyprus dominate historical accounts of the period, the medical service's overseas commitments were not all the result of conflict, many of its missions being straightforward assistance operations. There were, however, limits as to what it could do given the personnel shortages it suffered—perpetually—so some potential recipients of Canadian aid risked disappointment. For example, in 1962 the Surgeon General reported to the Canadian Forces Medical Council that

> because of the attrition in the United Kingdom Medical Services they could not meet certain overseas commitments and requested that Canada provide one internist, one surgeon, one obstetrician/gynaecologist and one anaesthetist for the military hospital at Accra, Ghana... At present there is one CFMS general duty medical officer serving there... As there is a shortage of medical officers and specialists in the Canadian Forces Medical Service, any additional commitments of this nature will be extremely difficult to meet. Accordingly, authority has been requested from the Chairman, Chiefs of Staff Committee to promulgate information to Reserve medical officers and ask for names of volunteers. Authority has also been requested to advise the Deans of Medical Schools in Canada of the potential requirement, in order that they may circulate their medical staffs and advise any interested individuals to apply.

Volunteers could take courses in tropical medicine at either St Anne de Bellevue, in Quebec, or the London School of Tropical Medicine.[13]

As for the CFMS officer already in Ghana, he reported in May 1963 that he had arrived in December 1961

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[12] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/80, Brig A.J. Tedlie, Commander HQ Nicosia Zone, HQ Nicosia Zone Directive 6/64, 2 Aug 64.

[13] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/MI-1, pt 7, 24th Meeting CFMC, 11 May 62.

> to find a completely new and very well equipped Laborarory. Much of the equipment was beyond the comprehension of even the most experienced technician and during the re-organization period preceding this date there had been very little training and upgrading of Laboratory Technicians. In addition, reorganization of administration and the large inventory resulting from the equipment expansion required that for the first time since the Hospital started an administrative side had to be formed in the Laboratory.

There,

> some eight Technicians worked. They were grossly overworked and the result was that the standard[s] were low, but fortunately their zeal for work was high. A vicious circle had started. The previous Pathologist had spent a whole tour planning and equipping a Laboratory of a required standard. The technicians continued the routine work as best they could, but through overwork, they could not be taken from the benches for training. Recording of results was neglected and grossly imperfect and daily the number of tests was increasing.

Outside the laboratory,

> a number of important things were happening. In the first place the Hospital commitments were increasing due to the accepting of civilians as entitled patients, to the expansion of the Ghana Armed Forces to include Air Force and Naval personnel. Most of all however, the expansion was due to the fact that "European Medicine" had at last been "sold" to the Army personnel[14]

of Ghana, the missionary side of health care overseas still running strong in the early 1960s.

Across the continent from Ghana was Tanzania, where Canada maintained a military aid mission in the 1960s, including Medical Officer Flight Lieutenant W.J. O'Hara. In 1966 he reported from that east African country that

> There have been no serious medical problems to date amongst our personnel and dependents apart from one man... Venereal disease represents our biggest existing problem. There are also morale problems among some of our unaccompanied married men. G.I. [gastro-intestinal] upsets and diarrhea are frequent, mild and of short duration... Venereal disease is rampant amongst the Africans. Contacts are not followed up. Prophylactics are not made available for the troops because their issue would make it appear that such practice is being encouraged, I am told,

although that attitude would change dramatically in subsequent years. It seemed, in fact, that soldiers required little outside encouragement to engage in sex, as "Many of our men have had sexual contact with African girls. No positive serol[o]gy has appeared yet. Many have requested blood tests just in case."[15]

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[14] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/121, Capt R.W.W. Kay, RAMC, Annual Report and End of Tour Report, 1962, 23 May 63.

The flight lieutenant's mornings were mostly taken up accompanying a Tanzanian medical officer, Captain Chuwa, on sick parade. Among Tanzanian soldiers illness was rampant

> Venereal disease tops the list. Malaria in the troops is still quite common and there is usually always one soldier with malaria in the ward at Colito. There have been a few cases of infectious hepatitis in the troops to date. There is a long waiting list for surgical repairs of inguinal hernias which Capt Chuwa does by himself at the General Hospital.

O'Hara also encountered one soldier suffering from leprosy. Another of O'Hara's tasks was doing medical examinations: "Doing recruit medicals for technicians and pilots to train in Canada is a frustrating job. The great majority of young men who come with Grade ten or Grade twelve education, who represent a very small minority of the whole country, must be turned away on medical grounds." Fifty to eighty per cent of these potential recruits had heart murmurs, probably due to childhood bouts of rheumatic fever. Overall, however, O'Hara observed,

> My experience here over the last six weeks has been invigorating, extremely interesting and above all challenging. When the day's very heavy routine workload is completed there leaves very little time for coping with the problems of organization and administration which require vast improvement. But every day sees some slight improvement and when the foundation is finally firm, then upward expansion should progress at an encouraging rate.[16]

Still, it was not a task for the faint-hearted—or for the overly sensitive—as O'Hara reported in June:

> A five day visit to 5 B[attalio]n at Tabora proved to be quite interesting. Amongst the dependents, who are all unimmunized, two cases of paralytic polio had just turned up. Also several children had died from whooping cough since our last visit. I was quite surprised to find that Capt Chuwa had neglected to immunize the dependent children because "there is no polio here." Immediate action was taken to get adequate polio vaccine to Tabora so that all dependents could be immunized.

This was not the only example of such medical practices. "One soldier was found to have active TB. In spite of his fever, harsh cough and hemoptysis he was being treated for Malaria and it was only after my determined efforts to get a chest X-ray, that the diagnosis was settled." The medical officer also admitted that "My own efforts to launch a cleanup campaign for the serious VD problem in TPDF [Tanzanian People's Defence Forces] has met failure. Social pressures, moral lethargy and ignorance are all contributing factors."[17] Medical practitioners engaged in the fight against AIDS three decades later would report the same obstacles.

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[15] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/L W.J. O'Hara, Med/MO, to SG, 6 Apr 66.

[16] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/L W.J. O'Hara, Med/MO, to SG, 6 Apr 66.

Other well-meaning, but less dramatic, attempts to improve health also met with failure; for example,

> The inter-service vitamins found in all first aid kits sent here cannot be used. The heat and humidity must be responsible for giving the pills such an offensive odour and taste that they cannot be consumed. As well they are all melted together and it is almost impossible to get the empty plastic container free of the stains and odour.

It was enough to begin pushing a conscientious medical practitioner into madness, but thankfully, in August, "All 1966 issues, to date of "The Practitioner", "The British Medical Journal" and "The Canadian Medical Association Journal" have arrived and are most appreciated."[18] On the basis of his own experience, O'Hara observed, "It appears that psychological stability is one of the most important prerequisites for any individual being posted to Tanzania. There are many unique stress factors here as well as environmental pit-falls which will most certainly claim their toll amongst any unstable individuals."[19]

It did not look as if the doctor's mission would end anytime soon, the Tanzanian People's Defence Forces having no better luck recruiting doctors than Canada did: "For the next two years it does not appear that there will be any additional MOs in the army. Medical students interviewed recently in Uganda by Dr Chuwa, were not interested in army life at all, and secondarily were not impressed with the salary." Further, O'Hara noted, "our present small group of Army "medical assistants" are very poorly trained, inadequate and incompetent but not because of lack of potential, interest or ability but because good medical training facilities are almost impossible to come by." He suggested that

> To be able to "swim" Tanzania must have para-medical personnel with sound training... If Canada could offer a scheme for training of medical assistants or para-medical personnel for TPDF, not only would the Canadian prestige be that more enhanced, but also the country's deplorable

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[17] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/1 W.J. O'Hara to SG, 16 Jul 66.

[18] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/1 W.J. O'Hara to SG, 6 Sep 66.

[19] NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/1 W.J. O'Hara to SG, Oct 66.

> medical standards could be given a solid foundation for future expansion and growth.

Perhaps in order to spark interest in such a plan, O'Hara made sure to fit it into the context of the Cold War, reporting that "The Chinese have built and equipped an army medical centre in Zanzibar recently, as well as staffing it with at least three medical specialists."[20] Canada had a competitor for the gratitude of the Tanzanian people.

Furthermore, the doctor had competition of his own to deal with, as "The witchdoctors still lead an active role here. Recently I had a TPDF pilot, trained in Canada, request to see his "local doctor." He had been sick with undulant [or fluctuating] fever for about one week, when he wrote a letter to me from his hospital bed. He stated that he was suffering from a disease unknown to modern medicine and that only "local doctors" could successfully treat it. He wanted me to authorize two weeks sick leave in order to go home and get this treatment." Within 24 hours of writing the letter, however, a combination of three antibiotics prescribed to treat Brucellosis "had finally worked, and he was discharged from hospital, "cured by modern medicine" ... he still sheepishly smiles whenever I mention the letter."[21] Such gloating may seem rather inappropriate today, but we can perhaps consider the medical officer's isolation, distance from home, and frustration in attempting to inaugurate public health procedures as mitigating factors.

With Canada's international responsibilities expanding in the 1960s, policy-makers decided to designate an infantry unit, from time to time, as a standby battalion. On a few occasions this body was actually mobilized, in an exercise setting, to test procedures should it be required for operations on short notice. One such was called Praetorium Pacis II, and was conducted in early 1968. According to Colonel E. Keith Fitzgerald, the Base Surgeon for Canadian Forces' Base Kingston, the series of manoeuvres "involved the processing of 1 Canadian Guards (UN Standby Battalion) based at Picton, plus increment personnel, for medical fitness to proceed to Puerto Rico (Vieques Island)..." Among the items on the supplies checklist were immunization, personal medical supplies such as prescriptions, and battalion medical stores, including publications. The medical processing team from Picton consisted of the base surgeon, two medical officers, a pharmacist, a senior clerk, and four medical assistants: "The battalion medical staff are vital in this situation as they supply all the battalion medical documents and know them well; they also know individual cases, can assess motivation, etc. They also

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20. NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/L W.J. O'Hara to SG, Oct 66.
21. NA, RG 24, 83-84/167, Box 7849, 2-6160-034/311, F/L W.J. O'Hara to SG, 19 May 67.

have access to medical supplies, stationary, etc," so as to ease the logistical burden for Kingston's staff.[22]

As for the procedure itself, "The troops to be processed were sent in "chalk" groups, i.e. groups for aircraft loading purposes and were received in the gym where they were "married up" with their medical documents, if available," and forms were filled out. The process was complex but streamlined:

> They then proceeded to an immunization table where their immunization book was located and it was determined if any immunization procedures were required; if so, they were given. They next proceeded to the dental processing team where they were checked for dental fitness and then on to one of three medical officers who gave them their final clearance as being medically fit or unfit; proformae were completed and immunizations signed... The examination for freedom from communicable disease was completed in the same building 48 hours prior to emplaning. This necessitated a return visit to the building.[23]

The Army had, however, recently changed its system of medical categorization, and many guardsmen were missing the necessary documents, so it was necessary "to perform chest x-rays, audiometric examinations and a cursory five to ten minute medical examination. Bus loads of groups of personnel requiring chest x-rays were despatched to CFHK," or Canadian Forces Hospital Kingston, over a three-day period. The Kingston hospital coped admirably: "Though this tremendous load was placed on CFHK, the x-rays were taken and reports rendered. Later in the processing, to cut down on the number of chest x-rays performed, anyone with a chest x-ray for any purpose in the previous two years," and who was free of tuberculosis, was accepted. Canadian Forces Medical Orders in fact called for "an unmanageable number of chest x-rays, i.e. 100% of the Force." As well, "Audiometric examinations were conducted for the first few days but it was quickly appreciated that they were a tremendous holdup in the medical processing and that if the audiometric examinations continued to be done it was conceivable that the troops would not meet their emplaning dates. It was therefore decided since there was no operational medical requirement for audiometry to discontinue the procedure."[24] Mobilizing for a UN mission was obviously not expected to be leisurely.

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22. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.
23. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.
24. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.

In all, 783 soldiers were put through the medical mill in four days, with 44 declared to be medically unfit and 45 found to have deficient teeth:

> By and large, the medical processing team picked up very few medical conditions which made a man unfit which were not already documented or for which there was a lead in the man's medical documents. Some conditions were picked up that a man volunteered or by the straight intuition of the examining medical officer—but there were very few.

Some suffered from ear inflammation, "which rendered a man unfit to fly... There were a few instances where a man had been declared fit to proceed and who returned to the processing team within 24 hours with a new and acute condition which necessitated making him unfit." At one point "six of six cooks presenting for processing were declared medically or dentally unfit. In all nine of ten cooks were unfit. It is understood to have been somewhat difficult to replace these personnel in the time available—particularly when some of the replacements themselves were found unfit."

Fitness of personnel was not the main problem, however:

> Perhaps the greatest difficulty presented to the medical processing team was the lack of adequate medical documents. In many instances troops arrived at Picton with no documents whatsoever; this would have necessitated a complete physical examination and immunization programme. It was a staff decision to either not process these personnel or to secure the necessary documents from their parent base if time permitted. The reason for lack of documents is considered to be a badly worded wire telling despatching units not to send any documents that would be retained in Canada and consequently the despatching units not having been told in a positive sense what they should send, sent nothing.[25]

The litany of problems continued: "The next greatest difficulty the processing team had was in rejecting those personnel who had a category," that is to say, had already been declared medically unfit in a previous examination, "but who had been despatched regardless..." There were several examples of such a state of affairs

> but possibly the most flagrant one was an RCR soldier who had been boarded to a category including a G4 [or of poor general physical condition; G1 would be the optimum] some four to five months previously for allergic rhinitis and allergic asthma. The board had been approved but he was despatched by his unit with the medical assistant of his rifle company carrying with him the allergy extract that he was to get weekly as an inoculation. This soldier unfortunately had no knowledge

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[25] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col F. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.

> whatsoever that he had a medical category that made him unfit to serve in an infantry battalion...[26]

Nor was he alone:

> Another case was a platoon commander in the RCR who had been boarded in Jul 67 to a category including V4 [poor vision, with V1 being the optimum]. The approving authority had noted that the decision whether this officer would remain in the infantry would rest with the Career Medical Review Board. It was not until the officer appeared in front of the Base Surgeon in Feb 68 at Picton that he found out he was unfit to be in the infantry, unfit to go to Puerto Rico and possibly, unless a Corps transfer was arranged, unfit to be in the Canadian Forces.

The solution was obvious, at least to the author of the report, who advised, "all examining medical officers should advise their patients of a category that they are recommending and that when [recategorization] is actioned by the man's commanding officer that the man be informed of what the commanding officer is recommending."[27] The base surgeon's final words were not encouraging as he reported that "There is little doubt that the medical fitness of 1 Canadian Guards and 1 RCR for UN duty in a tropical climate left too much to be desired. Clearly these units, if they are to be elite units capable of performing their roles with little warning, need more attention from superior headquarters and staffs... There is no doubt the intense screening process not only affected the morale of 1 Canadian Guards but also its battle worthiness in that many shifts of personnel within the battalion were necessary and many personnel had to be fitted into key jobs on short notice. With some knowledge and experience in such matters, the Base Surgeon, CFB Kingston, personally would not want to be commanding such a unit in a real situation—the results could be disastrous."[28]

After digesting Fitzgerald's report for a month or more, Colonel M. Fitch, the Director of Preventive Medicine, chose to focus on the unit medical officer (or UMO) as the source of the problem—and of the solution. He questioned whether doctors were being properly trained to serve as UMOs and whether they were properly supervised medically once they had joined their units. Each one was, after all, rather isolated, and not necessarily in close touch with the field ambulance commander who advised the Brigadier on medical matters. Furthermore, as Fitch asked, "who supervises the field ambulance CO?' the latter being as

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26. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.
27. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.
28. NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col E. Keith Fitzgerald, Base Surg CFB Kingston, to Reg Surgeon Ontario Med Region, 20 Feb 68.

much on his own as the unit medical officer. According to the Director of Preventive Medicine,

> It is apparent that we must have the same sort of organization in peacetime as on the battle-field in war. While we are doing this, we must not forget the MOs in RCN and RCAF units. They require the same kind of technical supervision. We might be justified in saying that the CO of a unit is responsible for the activities of his MO but I doubt that would work,

an infantry battalion commander not being in a position to advise a trained doctor on how to perform his duties. It must be remembered that when the medical branches were unified it was according to a compromise where both Regions and Commands (the latter part of the three fighting services' organizations) would have medical staffs. Fitch felt that some of the difficulties UMOs and field ambulance COs might face "may be the result of our dual (functional and geographical) organization. Perhaps the Command and Regional Surgeons are each expecting the other to do the job of bringing along the young MO."[29] Medical practitioners in the armed services operated with no little autonomy, but this was accompanied by a certain level of isolation and lack of direction from higher authority.

It would seem that this state of affairs changed little—if at all—as the 1960s gave way to the 1970s. When Canada agreed to provide troops for another United Nations Emergency Force Middle East (or UNEFME) following the war between Israel and some of its Arab neighbours in 1973, the resulting operation was not launched in a manner to impress the medical practitioners caught up in it. Lieutenant-Colonel R. Slavik, Deputy Command Surgeon for Mobile Command (in essence the post-unification successor to the Army), was not lacking in frankness when he related that

> Planning is the backbone of any military operation, unfortunately, as is so often true, our political masters feel that the CF can react on a moment's notice to a decision that takes them weeks to work out. The decision to commit Canadian troops to the UN operation in the ME [Middle East] was brought with many pitfalls, contradicting political ideologies and one-up-man-ships...

In what was called Operation Danaca, therefore, "Basically two medical plans were drawn up. These plans were for medical support of the Canadian contingent and varied with the size of the contingent. When I left Montreal for Cairo in early November 73, Canada's commitment to the UN was for a force of approximately 400 all ranks. The medical support for this Force was a "briefed up" [beefed up?] ambulance section ... and included two medical officers... Shortly after arrival in Cairo, the Canadian contingent was increased to approximately 1200 all ranks and the second plan for medical support was actioned by FMC/NDHQ," that is to say Force Mobile Command and National Defence Headquarters. The new plan "gave the Canadian contingent a medical subunit which was basically a forward surgical team superimposed on a clearing section."[30]

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[29] NA, RG 24, 83-84/167, Box 7825, 2-6100-1, pt 3, Col M. Fitch, DPMed, to DSG(A), 28 Mar 68.

So far, the changes made to the mission were not such as to overwhelm those responsible for providing its medical support, but the UN force as a whole soon rose to 8,000, including troops from Austria, Finland, Ghana, Indonesia, Ireland, Nepal, Panama, Peru, Poland, Senegal, and Sweden, as well as Canada. Although Poland was responsible for overall medical support, that country "was very slow in developing any of their assigned roles particularly that of Force Medical Services." As a result, Slavik reported, "Canada performed the role of the Force medical unit for the first 10 months. There was no Force medical plan, local Egyptian medical resources are of an unacceptable standard." Although "The Egyptian medical doctors appear to be well trained, the para-medical support is virtually non existent, the physical plants leave much to be desired and the Egyptian philosophy on life is much different from ours. If Allah decides today is your day—so be it." [31] As we have seen concerning previous missions to Africa, cultural differences often proved frustrating to Canadian practitioners who were immersed in the western approach to medicine.

Eventually things settled into a routine nonetheless, the Canadian medical staff operating as part of a Base Unit as it supported 73 Service Unit, 116 Air Transport Unit, and 73 Signals Unit. No 73 Medical/Dental Company was divided into the medical inspection room and ward, the operating room, the laboratory/X-ray, and dental section, with a total strength of 10 officers and 41 other ranks. In the period from December 1973 to April 1974, sick parade varied from 630 to 780 per month, with Canadian admissions to hospital varrying from 30 to 51 and non-Canadian admissions from 9 to 17. Slavik reported, "During my tour of duty nine (9) surgical casualties were admitted as a result of war injuries, one (1) GSW [gunshot wound] and eight (8) resulting from land mine explosions. The GSW was treated by delayed

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30. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 7, LCol R. Slavik, Role of the CFMS in UNEF (ME).

31. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 7, LCol R. Slavik, Role of the CFMS in UNEF (ME).

primary closure, he was returned to his home country (Austria) for rehab leave. 10 weeks post-op this soldier was back in theatre with his contingent." The mine explosions resulted in two deaths, one amputation, two evacuated out of theatre, and three who returned to duty after surgery.[32]

"One of the land mine incidents I felt might be of interest...," Slavik continued. "Nine (9) Peruvian soldiers were resetting a tent in the buffer zone that had been blown down due to high winds. As the last ten[t] peg was being driven into place it struck a land mine resulting in all nine (9) becoming casualties, two (2) were killed outright, the other seven (7) were evacuated to an Egyptian Army hospital, five (5) of which were immediately transferred to the Canadian Medical Company by Egyptian military helicopters." These latter were all treated surgically for various penetrating wounds: "Two (2) were evacuated to Peru, 14 days post-op and three (3) were returned to duty." Two others "that remained at the Egyptian military hospital were transferred to the Canadian facility 24 hours after laparotomy in a very sad state, both patients being in profound shock on arrival. Initially there was no blood pressure, resuscitation was rather dramatic and momentarily effectual. One cas[ualty] was stabilized to the degree that transfer by air to BMH [British Military Hospital] in Cyprus, eight days post-op, was possible. Unfortunately this cas died three (3) months later and I am unable to comment further. The second cas was stabilized to the degree that allowed further surgical intervention at the Canadian facility—several unsutured wounds of the gut were noted and repaired... Several drains were placed in the abdominal cavity." However, infection had progressed too far: "Despite these heroic efforts on the surgeon's part, the patient died 10 days post-explosion from renal shutdown secondary to septicaemia,"[33] or blood poisoning.

Despite such tragedies,

> the CFMS support to UNEFME was a very worthwhile endeavour. Many mistakes were made, many lessons re-learned, many of the problems could have been avoided if it were not for inexperience, particularly on my part. The CFMS has not been involved in operations of this nature for quite some years and it is hoped that we will again avail ourselves of this type of opportunity in order to maintain an expertise in field surgery and military medicine.[34]

32. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 7, LCol R. Slavik, Role of the CFMS in UNEF (ME).
33. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 7, LCol R. Slavik, Role of the CFMS in UNEF (ME).
34. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 7, LCol R. Slavik, Role of the CFMS in UNEF (ME).

The Surgeon General, in a follow-up to Slavik's report, noted that the current commanding officer of the medical company was a Lieutenant-Colonel Haley of 23 Medical Company (Militia) from Edmonton, posted to the United Nations Emergency Force on a six-month call-out. He was, however, the only medical reservist in the force, for "Although some members of the Canadian contingent are volunteers from the CF (Reserves) no militia medical tradesmen have been recruited."[35]

UNEF was not the only operation of the 1970s to come as something of a surprise to Canadian military medical practitioners; another was Operation Dolomite. An earthquake having struck Italy in the early days of May 1976, Canadian Forces Europe (or CFE) was directed "to send a Canadian rescue/assistance team to Italy to aid that country in earthquake relief operations." Generally, a task force formed from units of the Germany-based 4 Canadian Mechanized Brigade Group would establish a self-sufficient base within the damaged area to provide medical and other aid "as requested." Although it was felt that "The task force mission should in no way degrade" the operational capacity of Canadian Forces Europe, "The task force must be highly visible and indicative of CAF [Canadian Armed Forces] expertise and humanitarian concerns." Orders having been issued on the 7th, medical practitioners were on the ground in Italy by the 10th, although the situation was somewhat chaotic, not only because of the recent earthquake but due to the variety and number of organizations providing help. A question that came up at one briefing was, "As a large quantity of typhoid vaccine was sent to op[erational] area is an immunization program being carried out?" There was no immediate answer. Still, by the 11th it could be reported that, for a village named Pioverno, "A tented camp has been erected to provide food preparation, water, shelter, and med[ical] assistance." Also, Canadian personnel had finished "deploying tents, beds and kitchens in San Daniele" in support of a local hospital.[36] The latter would be an important focus for medical work for the remainder of the deployment.

Although by the 12th it was reported that "the initial emergency situation is over," that merely meant that the task force had a better idea of what challenges it faced. Medical assistance would continue to be a priority, as would engineer support to fire brigades and the provision of food and shelter. Five patients arrived at San Daniele that day, and a request went out for a medical officer, four medical assistants, and two ambulances. At nearby Venzone a medical officer, three medical assistants, and two ambulances transported patients to facilities undamaged by the quake. With the local health situation now clearer, the Command Surgeon advised that personnel joining the task force would need booster shots for typhus and other diseases. Operations were settling into a routine, including the report that "Mrs Margarita Perisano, the first patient in the San Daniele hospital Operating Room which had just been set up by Cdn personnel, gave birth to her seventh child, a 7.2 lb girl." She was only one of 33 patients treated that day by an organization at San Daniele that included a medical officer, 4 medical assistants, and 48 other personnel from various armed forces trades, on site "to assist Italian Medical Authorities."[37]

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[35] NA, RG 24, v. 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Apps 10, Report of Surgeon General.

[36] DHH, 77/216, Annex B, Commander CFE, 7 May 76; Annex D, Minutes of Briefing in CFE Ops Centre, 10 May 76; Annex E, Minutes of Briefing in CFE Ops Centre, 11 May 76.

We should note, however, that the confusion that had accompanied the initial deployment did not entirely disappear as operations settled into a routine. On the 14th the Command Surgeon noted that he had received an indent "for special drugs." Not knowing exactly what they were for, he could only provide an educated guess that "this must be for hospital patients." Similarly, the Chief of Staff to the Base Commander asked, "Could we get some clarification on French use of vaccines in Venzone," since "French officer has requested inoculation for 120," though the location and function of that contingent was something of a mystery. Information like "Some med persons seen" was not particularly helpful in that regard. Also, it was noted that "The US have formed a special medical evaluation team under the authority of the Vice-President prepared "to recommend provision of med supplies to national contingents," although that was not much clearer than French intentions. The Canadians, therefore, quite rationally focussed on their own operations, which that day saw patients treated in the aid station in Venzone while three ambulances provided medical support to engineering work in that area. At San Daniele, a section transported furniture and hospital equipment while another assisted in the erection of a field hospital.[38]

In keeping with instructions that Operation Dolomite was not to degrade the capabilities of Canadian Forces Europe, the CFE commander "questioned the use of Canadian medical supplies and vaccine in the area." He then gave direction "to have Italian authorities contacted and requested to supply appropriate medical supplies to our on-site Hospital Staff." There seemed to be no objections, and, in fact, whenever medical personnel reported on local feelings, gratitude seemed to be the dominant emotion. Motivation was thus easy to come by as patients were treated in facilities already setup while, near Mira Fiore, a "Medical-Engineer Team [was] sent to recce tent city for sanitation and hygiene for 700 persons." By the 18th, therefore, the Commander CFE could advise Lieutenant Colonel R.E. Moore, the commander of the Canadians in Italy, that "Your task force has performed extremely well. The situation is stabilizing and the time is approaching when the Italian authorities will begin to implement long term reconstruction plans. Your Task Force therefore can be withdrawn as your assistance is replaced by that provided by the local authorities."[39]

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[37] DHH, 77/216, Annex G, Minutes of Briefing in CFE Ops Centre, 12 May 76; Annex H, Minutes of Briefing in CFE Ops Centre, 13 May 76.

[38] DHH, 77/216, Annex J, Minutes of Briefing in CFE Ops Centre, 14 May 76.

The Command Surgeon and the Senior Staff Officer Construction Engineers (SSO CE) had consulted with the Italian authorities, and they reported that ongoing tasks included the "provision of hospital tentage and hospital support services (non medical)," at San Daniele, while the main body at Venzone focussed, medically, on providing "immunization to civilian population," "essential pharmaceutical supplies not otherwise available," and "advice on hyg[i]ene and sanitation." Looking to the future, at San Daniele, "the medical superintendent of this hospital was emphatic that the Canadian contribution of men and tentage was and will be essential to his continuing operation, until his patients can be otherwise housed." The surgeon and engineer agreed, to a point, recommending that "Canadian tentage should remain in use by the San Daniele hospital until replaced in two to three weeks. A small Canadian supervisory Detachment will continue to be required after the gradual reduction of the present strength," although it could be made up of non-medical personnel. Since "The mayor of Venzone states that almost all required civilian immunization is now complete,"[40] it was time for health-care workers to leave.

Getting out, however, was more difficult than getting in, as the Command Surgeon quickly discovered. At a briefing on the 22nd, "Col Tucker expressed concern regarding the covered walk ways connecting the tent hospitals to building. He felt such arrangements although operationally worthwhile may become a problem when we wish to remove them." The response, from a Lieutenant Colonel Cunningham, could not have been entirely satisfactory as he "pointed out that this was one of the problems with the two seemingly opposing tasks of assistance and withdrawal." In fact, the detachment at San Daniele still had 66 refugees and patients in its field hospital, though the restoration of commercial electricity to civilian facilities augured an end to the Canadian presence within the next few days. On the 24th, therefore, "Hospital Furniture and Supplies were moved. The Task Force in that area was cut down to half section for hospital maintenance. 27 refugees and 29 patients under Canadian canvas," a reduction from two days before. Next day the generator was disconnected, and on the 27th the field hospital was handed over to local authorities. There was nothing left to do but to move out, the main body heading for Germany on the 31st, and to give closing speeches, Brigadier General Belzile, the Acting Commander for Canadian Forces Europe, commenting on "the professional manner in which the CFE/BASE staff have handled Op Dolomite. It has given a further opportunity for a real test for the operations centres and sections to do the very thing they are designed to perform"[41]—and he may have added, on very little notice.

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[39] DHH, 77/216, Annex K, Minutes of Briefing in CFE Ops Centre, 15 May 76; Annex M, SDO Briefing, 16 May 76; Annex P, Operation Instruction 02, 18 May 76.

[40] DHH, 77/216, Annex P, LCol H.R. Bohne, SSO CE, Report on Visit to Udine Area 16/17 May 76 by Surg CFE and SSO CE, 18 May 76.

Dolomite was not unique, as only a few years later another such surprise came in the form of Operation Abalone. In the early part of April, 1979, the Caribbean Island of St Vincent was shaken by several volcanic eruptions necessitating the evacuation of 15,000 to 20,000 people to some 60 or 70 refugee camps in the southern part of the island: "A 13 member medical team from 2 Field Ambulance SSF [Special Service Force] were dispatched [sic] to render aid to the Island," an orders group held at 2300 hours on 14 April setting out the detachment's role. It was to "treat and hold casualties," "assist with any public health problems," and "evaluate the medical situation and report back to the Surgeon General's office, NDHQ within 24 hours after arrival." From Petawawa the small group deployed to Ottawa with a cargo vehicle, a trailer, an ambulance, modular tentage, 100 blankets, water purification tablets, a 10 kilowatt generator, and a Herman Nelson heater. The whole was loaded onto a C-130 cargo aircraft while an officer with the Surgeon General's office briefed the detachment's commander, Captain D. Tyrrell.[42]

Tyrrell's role was multifaceted. First, he was to "obtain verbal authority to practice medicine in St Vincent on emergency basis," since neither he nor any member of his team was licensed to practise in that country. Also, he was "avoid committal of further aid from Canada without permission of Ottawa," military medical resources being somewhat limited, as we have seen. Still, the captain was to "maintain independence, as much as possible, so as not to appear a burden on local authorities" and provide a "full appraisal of medical situation within 24 hours of arrival..." After his plane landed he got in touch with a Doctor Liverpool, the co-ordinator for the Emergency Medical Committee, as well as several staff members of the Kingstown General Hospital. Among the challenges identified were "Acute Problems—gastroenteritis, scabies, conjunctivitis," "Public Health—water, food handling, etc," and "Chronic Problems—hypertensives of medication, diabetics and cardiac patients, parasitic infections and dental problems." Some ideas proved unworkable. For example, "It was decided at this stage to do faecal screening for parasites on 20,000 people, which is an endemic problem in this area, by the local professor of Medicine." It would have been a huge task, but "Fortunately, sense prevailed and this scheme was abandoned. With such extreme views it was somewhat difficult for a medical newcomer to fully appraise the situation. It was decided that we should provide a mobile medical clinic to those areas where the need was greatest."[43]

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[41] DHH, 77/216, Annex I, Minutes of Briefing in CFE Ops Centre, 22 May 76; Annex V, SDO Briefing, 24 May 76; SDO Briefing, 25 May 76; SDO Briefing, 27 May 76; Minutes of Briefing in CFE Ops Centre, 31 May 76.

[42] DHH, Annual Historical Reports, 2104, Operation Abalone, Post Operation Report, nd.

A key player in this plan was Master Corporal Naylor, a Preventive Medicine Technician, who "was extremely useful in inspecting and advising on health measures within the evacuation centres, namely, over 60 centres providing food and shelter for 15-20,000 people. These reports dealt essentially with sewage disposal, food handling, and garbage disposal. These recommendations were passed on to the Central Medical Committee for further action." Also, the team provided "Clinical medical care ... on an ad hoc basis in daily liaison with the Co-ordinator of the Central Medical Committee. This was to fill in the gaps in an otherwise normally functioning medical clinic system. Our mobility and speed of mobilization proved to be an asset." As one would expect for such a deployment, however, some lessons were learned the hard way, such as the inappropriateness of the food the medical team brought for its own consumption, called an Individual Ration Pack, or IRP: "These menus were found to be similar in make-up and were felt to supply too heavy a meal for tropical climates. In the tropics, the caloric intake required per day/per man is approximately 2000 calories, the menus supplied a minimum of 5000 calories." Also, cattle were found to be suffering from Brucellosis, so powdered milk would have been welcomed. Another note resulting from this deployment to warmer climes was that "It was quite evident that a careful and supervised period of climatization had to be carried out in this type of climate. Sunburn, to the extent of incapacitating a soldier, is a definite risk as well as heat stroke and heat exhaustion."[44]

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[43] DHH, Annual Historical Reports, 2104, Operation Abalone, Post Operation Report, nd.

[44] DHH, Annual Historical Reports, 2104, Operation Abalone, Post Operation Report, nd.

That the Canadian Forces Medical Service was learning from its deployments was all to the good, since in the decades that followed it was often called upon to support overseas operations of one form or another. In the 1980s, for example, Operation Vagabond was sent to observe the cease-fire between Iran and Iraq when their bloody eight-year war ended in 1988. Each part of the world poses its special medical challenges, Iran/Iraq being no exception, and all Canadian troops headed for the area would need to be immunized—or have their immunization brought up to date—against tetanus, diphtheria, and yellow fever, with vaccination against typhoid and polio also recommended. Chloroquine could be used against malaria, for though strains resistant to that medication had evolved in previous decades, they were only common near the Afghan border, some great distance from where the Canadians would be operating. Additional health concerns were anticipated: "Vector borne diseases abound in this area, e.g. sandfly fever, dengue, malaria, leischmaniasis," so barrier methods such as insect repellent and mosquito netting would be required. Furthermore, "a multitude of food (e.g. typhoid, hepatitis A) and water (e.g. cholera, hepatitis non A/non B) borne diseases ... could affect PK [peacekeeping] personnel and hence the mission. Immunization, e.g. typhoid and IG [immune globulin, containing antibodies to certain viruses and bacteria], cannot be relied upon to provide high level protection..." Therefore, it was decided that "until there is solid evidence to the contrary, all indigenous food and water should be considered microbiologically suspect and measures taken by PK force to provide a safe food and water supply and by individuals in the force to follow food and water discipline. Predeployment and periodic education in this regard is considered vital."[45] There were no arguments to the contrary.

Each soldier would also have to be educated or re-educated on how to operate in hot and cold environments, including such issues as fluid intake, acclimatization, proper clothing, skin care, eye protection, and sunburn prevention. "Hazardous flora and fauna" would also be part of any pre-deployment briefing. A threat that had more recently entered the preventive medicine lexicon was AIDS, although

> HIV has not been officially reported to the WHO in either country. Iraq has a requirement for HIV serotesting of all foreigners who are under sixty years of age and staying in Iraq for more than fourteen days. Apparently the testing is done in Iraq on arrival and a test done elsewhere, e.g. in Canada, is not accepted. This requirement will need to be clarified for members of this Pk force. Relevant UN authority should be strongly urged to have Iraq agree to waive this HIV testing require-

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[45] NA, RG 24, v 22,868, 3375-OV, FMCHQ to HQ SSF Petawawa, 28 Jul 88.

> ment entirely... Other sexually transmitted diseases [STDs] occur in both countries. Hepatitis B carrier rates are fairly high. Pk forces should be briefed about STDs and their avoidance and condoms should be readily available for those who cannot remain sexually continent,

a marked change from the policy in Tanzania. It was decided that "Hepatitis B vaccination for an entire contingent is not particularly recommended at this time." A related issue was the supply of blood products, and the mission was advised that "Unless assurance can be obtained that local blood/blood products have been screened for HIV and Hepatitis B, these products are best avoided." [46]

There were further health concerns: "Substances of abuse (other than perhaps alcohol) are fairly accessible in Iran/Iraq and our Pk forces should be properly briefed." Tuberculosis was fairly common in the area, so soldiers had to be tested both before and after deployment, while "Swimming could entail infectious disease hazards, e.g. schistosomiasis," or infestation by a blood parasite, so it was recommended that "swimming, wading or bathing in fresh/untreated water, e.g. stream, lake, pond, canal, is to be avoided. Salt water beaches are probably alright as long as they are not contaminated with sewage." Finally, there were also ordinary hazards: "Accidents, especially vehicle related, will predictably be a leading cause of serious morbidity among Pk personnel. Unnecessary risk taking behaviour should be actively discouraged, while good safety habits, e.g. seat belt use, should be encouraged." [47] Cease-fire or not, the mission would not be without risk.

Iran-Iraq was just one mission among dozens that saw the deployment of Canadian troops in the late 1980s and 1990s, so that the medical units whose role it was to support Canadian Forces operations were sometimes hard-pressed to keep up with developments. One of these was 2 Field Ambulance, which in 1989 "assisted a number of units during pre and post deployment phases of United Nations operations, including Op Snowgoose—Royal Canadian Dragoons Cyprus peacekeeping tour; Op Matador—89 Logistics Unit Namibia; Op Sultan—Honduras peacekeeping tour; and Op Hugo a hurricane relief effort."[48] The following year, among other assignments, "2 Field Ambulance was tasked to provide a Medical Assistant qualified 6B," the course needed for promotion to Warrant Officer, "to organize and run the Medical Inspection Room (MIR) at the Canadian Forces Middle Eas[t] Joint Headquarters in Bahrain, Persian Gulf..." The posting would last from October 1990 to April 1991,[49] and was, in fact, part

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46. NA, RG 24, v.22,868, 3375-OV, FMCHQ to HQ SSF Petawawa, 28 Jul 88.
47. NA, RG 24, v.22,868, 3375-OV, FMCHQ to HQ SSF Petawawa, 28 Jul 88.
48. DHH, Annual Historical Reports, 2104, For Year 1989.
49. DHH, Annual Historical Reports, 2104, For Year 1990.

of the Canadian deployment to the Gulf War, of which we shall see more in Chapter Ten.

As for the experience of the later Cold War, one thing was clear: many missions would come as a complete surprise to the Canadian Forces Medical Service. Although that might be interpreted as a lack of foresight, the reader is reminded that in spite of the rise of the social sciences in the last hundred years, human relations are still extremely unpredictable. For the CFMS, that meant that flexibility was as important as preparation. Training was an important part of the latter, but an interesting development of the Cold War after the armistice in Korea was that the field ambulance, which had been so important operationally in the world wars and the Korean conflict, became, in essence, a training organization. Whether for operations of a missionary nature in Ghana and Tanzania, or for peacekeeping in regions like southeast Asia and the Middle East, field ambulances were not deployed as such, although they might provide the necessary equipment and personnel. That trend would continue into the post-Cold War era, individual medical practitioners, in a sense, becoming more important than the units they were part of, the latter evolving from operating in support of the combat arms to ensuring their personnel were ready for deployment on a wide variety of missions anywhere on the planet.

Chapter Eight

The Later Cold War: Infrastructure, Health Care, and the Treatment of Casualties

That the 1960s were the end of a golden age in the history of Canada's armed services was evidenced in many ways. The Department of Defence Production, formed in 1950 after the outbreak of the Korean War, and whose role was to acquire what National Defence needed, was soon to be abolished. The last of twenty destroyer escorts were being built for the Royal Canadian Navy, ships which would have to serve for three decades or more, though that was unknown at the time. The phase of the Cold War where Canada actively prepared for a conflict with the Soviet Union was thus over, the country turning its attention to a declining dollar, budget deficits, and such social programs as medicare. The main threat to Canadian society was no longer seen to come from without, as it had since North Korea invaded its southern neighbour in 1950, but from within, and its name was not a simple one like communism, but more complex, such as social dislocation, income disparity, or artificial obstacles to opportunity. From the Canadian armed services' perspective, the most obvious example of Canada's political leadership seeking a new direction was the Glassco Commission, or Royal Commission on Government Organizations, which reported in 1963 on ways to make government more efficient—ways which boded ill for DND budgets in general and those of the Canadian Forces Medical Service in particular.

One of the Commission's recommendations that struck at the heart of the CFMS was the suggestion that "the hospitals of Service Personnel in Canada be gradually transferred to civilian hospitals, and no building of new Service hospitals or replacement or enlargement of existing institutions be undertaken." Its justification for such a radical course of action, seemed, at least on the surface, logical:

> In the field of medical care, the Armed Forces have certain obvious requirements that must be met from their own resources. Aside from succouring the wounded in time of war, provision must be made for personnel in barracks, afloat, or located in isolated areas. In general, the existing system of infirmaries and sick quarters must continue to be staffed and maintained for such purposes, and the Armed Forces must carry on their strength qualified doctors, nurses, and other specially trained personnel.

In regards to more sophisticated facilities the story was much different, and

> The needs of the Armed Forces within Canada in peacetime, however, do not necessitate the operation of special acute treatment hospitals of their own. The character of war, with its present nuclear hazard, invalidates the concept of yesterday under which the creation of hospital capacity for war wounded might have appeared a farsighted precaution. An argument may be advanced that the ability of Service doctors to practise in their own hospitals is necessary to the achievement of a suitable degree of professional competence, as well as for a desirable effect upon esprit-de-corps generally. While this contention may have some validity, your Commissioners see no compelling reason why Service personnel who are in need of hospitalization in peacetime should not be treated in community facilities.[1]

The legal infrastructure for such a policy was, indeed, already in place, as

> Under provincial hospitalization insurance plans, Service personnel are entitled to hospitalization in whichever province they are located, and, in the view of your Commissioners, community facilities should be employed in preference to the creation of segregated institutions. This view is reached not only from considerations of cost and quality of medical care, but in the belief that the establishment of a system of Service hospitals across Canada constitutes an unnecessary elaboration of the responsibilities of the Armed Forces, which afford no significant advantages.[2]

One reaction, by Surgeon General T.B. McLean, was to provide authorities with a history lesson on how in the early 1950s insufficient medical graduates were entering the armed services because of "the lack of professional career opportunities," "the lack of professional prestige," "the strict limitations of rank structure within the medical branches," and "the inadequate remuneration commensurate with professional qualifications." The Surgeon General argued, perhaps with some exaggeration, that the formation of the CFMS had solved all four, the first two with the establishment of hospitals:

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1. NA, RG 24, Acc 83-84/167, Box 6609, 2-70-156-12, SG to PMC, 16 Sep 63.
2. NA, RG 24, Acc 83-84/167, Box 6609, 2-70-156-12, SG to PMC, 16 Sep 63.

> If a medical service for the Armed Forces is to be retained, hospitals are mandatory. Without definitive care hospitals in Canada the professional competency of medical officers, and all medical personnel, will deteriorate rapidly. The Royal Commission recommendation, if followed, would negate and destroy the Canadian Forces Medical Service by rapid regression to clinical impotence.[3]

To further his argument, McLean suggested that, financially, the armed services' hospitals were a bargain. For example, "Costing of professional services for the month of November 1962 at Canadian Forces Hospital Kingston, based on the Schedule of Fees for the Ontario Medical Association, amounted to $38,000. Actual pay and allowances for Service doctors involved amounted to only $15,000," or less than half. He added, "It is known that very often Service personnel treated in some civilian and DVA hospitals are seen only by resident staff and as a result, we feel, are given much inferior care than that supplied in our own definitive care hospitals where Service specialists are present for the entire working day. It is considered that Service personnel hospitalized in some civilian and DVA hospitals are, to a large degree, used as intern and resident bait," a harsh accusation made harsher by the Surgeon General's not providing any evidence. As for halting any further construction, McLean noted that

> At the present time there is no building of Service hospitals underway, and no enlargement of existing institutions is projected. However, in several locations in Canada facilities exist that are of the "shack" type and are not only a military, but a national disgrace. These must be replaced in order that adequate patient care may be given.

As one would expect, the Surgeon General's conclusions differed markedly from those of the Glassco Commission, one being that "To wreck the Medical Service by giving away its hospitals would be, to say the least, inconsistent and indeed an appalling example." Another, showing somewhat less anger, was to refer to "The greatly increased cost for professional services that would be incurred by substituting civilian for Service doctors, to say nothing of the heterogeneous type of care provided by Hospital Insurance Plans that would impose on the Services at least 12 standards of medical care for their personnel,"[4] each civilian jurisdiction having its own regulations. In general, the Personnel Members Committee concurred with McLean's views.

So did an Interdepartmental Committee, which reported, in part, that

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3. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 27, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 16 Sep 63.
4. NA, RG 24, 83-84/167, Box 7720, 20-1-1, pt 27, Surg RAdm T.B. McLean, SG, Supporting Data for PMC, 16 Sep 63.

A Medical Assistant and patients. Canadian Forces Joint Imagery Centre, ILC 91-019-138.

> The Canadian Forces Medical Service is committed to the complete medical care of all Canadian Servicemen, not only in Canada but in Europe, Africa and the Middle and Far East, as well as certain civilians and over 35,000 dependents who accompany Servicemen to isolated areas of Canada, and overseas. To maintain clinical proficiency and a practical rotational system, it is evident to the Committee that Canadian Forces Medical Service definitive care hospitals must be maintained in Canada. They are mandatory for training all Service medical personnel to the highest professional proficiency; to produce specialized military medical training; and to provide a professional career incentive.

Therefore, "It is impossible, in the Committee's view, to envisage how the Canadian Forces Medical Service could meet its commitments, or how medical personnel could be attracted to or [be] retained by the Forces without the opportunity and incentive to develop and practise their skills in these hospitals." The Committee's recommendation that "the Canadian Forces Medical Service should continue to operate hospitals in Canada"[5] will thus come as no surprise to the reader.

Budget cuts were, however, unavoidable in the years that followed, given the shift in government priorities.. The Canadian Forces Medical Service having been instructed to reduce costs, the 1968 Surgeon-General's report announced that "A 600-bed hospital, to be operated in the field, had been planned but this has been largely deferred for one year. There is a 300-bed hospital in being which would not be adequate for an entire Brigade. Other savings in supplies will be achieved from the stockpile of drugs and materiel." Another possibility, which had been raised in the 1963 Glassco Commission report, would be the

[5] NA, RG 24, Acc 83-84/167, Box 6609, 2-70-156-12, SG to PMC, 16 Sep 63, Annex A.

"Employment of Civilian Doctors and Nurses," although "This does not have too much effect upon the CFMS unless the present strength of Service medical personnel should drop acutely."[6]

The process of dealing with budget reductions must have been extremely frustrating for such officers as the Surgeon General, the President of the Defence Research Board, and their staffs, not so much for their impact but due to the extremely detailed discussions that seemed to surround every decision consequent to the cuts. In 1971, for example, Philip S. Corbet, chairing the Advisory Committee on Entomological Research of the Defence Research Board, wrote his superior to complain of changes on the Surgeon General's staff:

> It was brought to the attention of the Defence Research Board Advisory Committee on Entomological Research at its meeting in Winnipeg on 12 May 1971 that it is proposed to terminate the position of Entomologist on the Surgeon General's staff in the Department of National Defence with effect from 31 December of this year. I write with the unanimous support of the Advisory Committee to request that this step be reconsidered.

As Corbet explained, "Arrangements for liaison between this Committee and the Armed forces have been discussed at frequent intervals since 1950... In 1950, too, the first short course on entomology for Canadian servicemen was organized by this Committee." In fact, "The establishment of positions of this kind was originally proposed by this Committee in 1953 ... as a result of a crescendo of frustrations arising from attempts, at that time, to effect the adoption and application within the Armed Forces of the results of research work done specifically for the Armed Forces, under the aegis of this Committee. With the approval of the first position, then in the Directorate of Works (Army), and the filling of it (by Mr A.E. Winmill) in 1956, there was an immediate improvement in the situation, and it was at once apparent to the Committee that this had indeed been an appropriate step to take."[7] Having an expert on insects within the headquarters staff helped ensure that research on how to control them was actually put to use. The position was, however, abolished.

One consequence of budget cuts, subsequent reductions in staff, and accompanying reorganization was a growing dissatisfaction within the CFMS in the early 1970s. In order to understand some of the causes of such dissent, it is necessary to examine, though briefly, the chain of command as it stood at the time. In 1973, at the head of Canada's military organization was the Chief of Defence Staff, with his immediate subordinate the Vice-Chief of the Defence Staff. Subordinated to the latter were six Assistant-Deputy Ministers (or ADMs in bureaucratic parlance), one acting as Deputy Chief of the Defence Staff and the others for Policy, Evaluation, Matériel, Finance, and Personnel. The Surgeon General reported to the last of these, with the help of two immediate subordinates, the Director-General Dental Services and the Deputy Surgeon General. Under the latter came the Directors of Preventive Medicine, Nursing Sisters, Medical Staff and Training, Pharmaceutical Services, Medical Treatment Services, Medical Financial Administration, as well as Medical Plans and Requirements.[8]

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[6] NA, RG 24, 83-84/167, Box 7789, 2-6030-110/M1-1, pt 7, 31st Meeting CFMC, 25 Apr 68.

[7] NA, RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Philip S. Corbet, Chair Advisory Ctee on Entomological Research to the DRB, to L.J. L'Heureux, Chair DRB, 9 Jun 71.

At that point there was no longer a clear-cut medical chain of command, since as we have seen most medical units and facilities fell under the Commands, such as Mobile Command, Maritime Command, and Air Command (there were others), that had been formed subsequent to unification in the late 1960s. There were exceptions, such as the National Defence Medical Centre and the military section of the DCIEM (Defence and Civil Institute of Environmental Medicine, formerly the Institute of Aviation Medicine), which fell directly under the Surgeon General's purview, but generally medical personnel in the field reported to the fighting services which they supported, the medical chain of command that had developed a few years before having been dismantled. One problem, according to the Surgeon General himself, at the time Rear-Admiral R.H. Roberts, was that "he had to go through the Command organization which in turn had imposed quite a few constraints and had been bad for overall operational control." He and Major-General J.W. Barr, the latter a onetime surgeon general himself, therefore proposed "a return to the former organization whereby the Surgeon General had direct control of certain units. These proposals had been discussed with little resulting change."[9] The Canadian Forces Medical Council was more than attentive to such demands, resolving in November 1974 "That this Council is dismayed in that the recommendation ... that the Canadian Forces Medical Services be reorganized on a regional basis under the control of the Surgeon General has not been implemented."[10]

It was becoming clear, however, that if the medical services had spent the 1950s attempting to organize for war, they would spend the

8. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73, Annex 2.
9. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974.
10. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 9, Report of Chairman Canadian Forces Med Council.

sixties and subsequent decades organizing for survival. Such was evident in issues relating to medical reservists, such as a 1973 report by Lieutenant-Colonel E.R. Junkins to the Defence Medical Association. Referring to communications from a Lieutenant-Colonel Kryski, commander of No 6 Medical Company, complaining of difficulties in recruiting officers, Junkins noted "that in many instances Col Kryski's points were common to other areas as well," such as recruiting more generally. One possible solution might be "approval of a "provisional clearance for officers" to enable units to take an officer on strength for purposes of local training and pay while awaiting final security clearance," all military personnel having to undergo background checks to ensure they were not working for the communist block or subversive elements. Further, he recommended that "It was considered essential that reserve medical units be geographically located in population centres where an adequate number of medical and para medical people are available for recruiting and training and not solely according to geographical and political considerations." Another way to increase recruiting might be "means whereby the activities of medical reserves were brought more in to the public view, e.g. during operations in support of reserve, regular force or civil authorities. These activities augmented by the use of up-to-date equipment and an interesting training programme would stimulate interest and recruiting in the medical reserves."[11]

At that same meeting Colonel I.M. Mackay, the Defence Medical Association's representative to the Surgeon General, reported that

> the present status is that there are in the Medical Reserves about 500 personnel. Fifty of these are Navy in some 16 locations, 13 of which are very close to Militia Medical Units. There are some 16 in the Air Medical Reserve existing in units located close to Militia Medical Units. The remainder are in Militia Medical Units (6 Medical Companies, 13 Medical Sections of Service Battalions and 32 Regimental or Unit increments). In all, too small in numbers and too fragmented to be able to carry out the role of a reserve unit, i.e. support of the regular force. The CFMS has produced a plan asking for an establishment of some 1300, which compares roughly with the establishment that existed before amalgamation of the regular force, i.e. some 1400, although the actual strength was about 700. The 1300 would be organized into 13 Reserve Medical support Units geographically situated across Canada.

Accompanying their formation would be "the reintroduction of Regional or Command Surgeons (Reserve) in the rank of Colonel... The Surgeon General would have technical command and budgetary control of the medical reserves,"[12] hence making the process part of the centralization he had been advocating since unification.

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[11] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

Possibly the Commands were less interested in the reserves than in the control over regular force personnel, but for whatever reason the plan received ministerial sanction: "each Reserve Force must be convinced of the improvement in medical services that can be expected for their individual service from such amalgamation. Some discussion was held in respect to the problems that could be expected from the amalgamation re budgeting, training medical assistants, etc. Also the features of such amalgamation were discussed, e.g. a larger resource of medical personnel, increased inducement of recruiting trained para-medical personnel, e.g. oxygen therapists, radiographers, etc, by virtue of a larger scope for their skills, in a reserve environment." A few details needed to be ironed out, and "In reference to summer training it was emphasized that members of the amalgamated medical reserve would still be sent to train with their own element [i.e. land, air, or sea] except when it was directed that some sort of staff course or training was necessary," and that "amalgamated training would provide a pool of medical personnel trained to one high standard available for duty with any element."[13] Conceptually, in any case, the plan seemed sound.

There were, however, ominous clouds on the horizon, Mobile Command, in essence the successor to the Army in Canada, proposing a reorganization of reserve medical units in 1975 that caused no little concern within the Defence Medical Association: "The current intent Mobile Command as presented in their Administrative Directive disbands the present Medical Companies and replaces them with a Medical/Dental Company in each Service Battalion." Policy-makers and the DMA were unaware, or had forgotten about, experiments in 1964 that had demonstrated the insoluble difficulties such an organization faced in the field. Instead, the DMA criticized such consolidation on the grounds that it would leave some reserve units without proper support, especially since it would strip infantry and armoured regiments of their doctors: "The position of the Regimental Medical Officer is one of the most useful both to the Unit in which he serves and to the Medical Officer in his Canadian Forces Training. There is no substitute found in all of Training Command with all its expertise in courses management to equate with time spent in a Regiment, Squadron or a Ship."[14]

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[12] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

[13] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

[14] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Annual Meeting 1975, 19 Sep 75.

The Defence Medical Association therefore recommended, among other things, that the position of Regimental Medical Officer be reinstated for each major unit, and that the number of MOs be related to the number of reserve personnel in a given district. As we have seen, such officers worked with no little autonomy, and although that might cause problems in relation to applying a uniform doctrine, it nevertheless allowed the development of skills and initiative that might prove useful in time of emergency. The DMA suggested that "separate Medical Companies should be maintained for specific training in the role of reserve medical support of the Regular Forces," so medical practitioners would answer to their own chain of command rather than to a Service Battalion headquarters. It also recommended that the commanding officer of a medical company have the rank of Lieutenant-Colonel, no doubt to bring him in line with unit commanders in the infantry and other arms. The DMA felt "That the medical support of the Reserves requires integration and that this is best achieved by the institution of a Regional Surgeon (Reserves) who with a Regional Matron and staff should be supported by and preferably, but not necessarily, located with the Regional Surgeon of the Regular Forces." Finally, in something of a dig at the process as a whole, the DMA recommended "That in future when such a fundamental change in the structure of Reserve Forces is being considered, that some consultative arrangements should be made with knowledgeable experts from the Branches concerned."[15]

The issue of control was thus a constant tug-of-war between the Commands who wanted medical units reporting to their headquarters and the Surgeon General (or equivalent) who sought to centralize medical services under his office. By the late 1980s this process had led, among other things, to the formation of the Canadian Forces Hospital and Medical Supply System (or CFHMSS), with responsibility for Canadian Forces Hospitals Halifax, Esquimalt, Valcartier, Cold Lake, and Oromocto as well as the Central Medical Equipment Depot (CMED) and the Regional Medical Equipment Depots (RMEDs) at Debert, Valcartier, Calgary, and Chilliwack.[16] Examples of the challenges faced by the CMED and RMEDs were provided by a Defence Medical Association report of 1973:

> There has been a noticeable increase in the medical equipment budget in the past two years, reflecting the trend to more sophisticated and expensive new and replacement equipment, to keep pace with modern medical advances and techniques. This is particularly true in the x-ray and

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[15] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Annual Meeting 1975, 19 Sep 75.

[16] DHH 1326-1910, Pt 3, NDHQ to Distribution, 5 Aug 89.

> laboratory fields. There are increasing requirements too for cardiac monitoring equipment ranging from portable battery operated defibrillators to patient monitoring systems.[17]

Similarly, in 1974 the Surgeon General reported that

> There has been a further sharp increase in expenditures for both medical equipment and consumable medical supplies this year, reflecting higher prices in general rather than increased consumption. The most dramatic price increases, running as high as 50-75% have occurred in cotton products, such as bandages, sponges and adhesive tape. A worldwide shortage of cotton has produced a seller's market and has caused temporary supply problems in some instances.[18]

Somewhat larger items of kit were ambulance vehicles, and in 1973 the Defence Medical Association noted that "In the continuing effort to improve the medical services evacuation capability," the CFMS was considering the "procurement of replacement commercial pattern ambulance, similar to those used by Ontario Emergency Health Services Ambulance Service, for use on CF bases/stations." It was also looking towards an "assessment of requirement and development of specifications for a 4 wheel drive "Suburban" ambulance for employment in remote installations and an airfield crash response ambulance." There was also a plan to replace the standard 3/4-ton vehicle used in the field with a 1 1/4-ton model, as well as a concept for a tracked all-terrain vehicle. Optimism was thus not lacking in regards to procurement, and "It may be note worthy that considerable success and mutual understanding is being achieved through the close co-operation which currently exists between the Surgeon General Branch, as a user[,] and the developing agencies."[19]

Some items, such as medication, posed a far more complex problem, requiring the Canadian Forces Medical Service to maintain a Catalogue of Medical Supplies that needed frequent updating. In 1971, for example, after soliciting advice from researchers in such institutions as the University of Ottawa and Dalhousie University, one item, Chloroxylenol (Dettol), used as an antiseptic, was deleted from the list as it was "not recommended by Dr van Rooyen," showing "poor activity against gram negative bacteria," and because "sensitivity reactions common." However, it was decided to add Providone-Iodine Solution, also an antiseptic, to the list since it was "available as scrub and solution"

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17. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73; Annex 2.
18. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 10.
19. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73; Annex 2.

while its "Color delineates skin area which is antiseptic"[20] after application. Similarly, the following year "A series of user tests of eight brands of X-Ray Film was performed... Results indicate that three of the eight brands available produce consistently satisfactory images under field conditions." A "Core List' of suppliers and products "will be proposed for 1973-74 procurement."[21] Of course, all items had to abide by standardized NATO nomenclature, 62 undergoing name changes in 1981 for that reason,[22] while the prospect of alliance warfare encouraged the stockpiling of a war reserve. In 1999, anthrax vaccines, diazepam and morphine in auto-injectors, and plague vaccines were stored in this manner.[23] (The diazepam was a treatment accompanying the use of atropine, itself an antidote to nerve gas.)

Nor were supply issues limited to specialized facilities and staff officers in headquarters. Susan E. Aitken, a newly-minted medical officer in July 1970, was sent to Winnipeg for her first posting, where, "While working with SAR [Search and Rescue] crews, it became evident that the medical kits they were using were woefully inadequate for the changing profiles of the victims of aircraft crashes. Technological advances permitted earlier location of downed aircraft and therefore the people aboard had a better chance of survival," meaning that they were still alive when rescuers found them.

> Together the SAR technicians and their interested physician developed a new medical kit, but one thing leads to another. To complement the medical supplies and equipment in the kit, the SAR Techs needed improved skills in first aid and medical techniques. To that end Captain Aitken "liberated" the US Army teaching manual used for training medics for service in Vietnam. Aitken adapted, plagiarized and re-wrote it to meet the needs of search and rescue in Canada. The SAR Squadron included medical exercises in their training that permitted real-time use of the kits and newly acquired medical training to refine both the supplies and the skills needed to use them... The enthusiasm showed by the Winnipeg SAR Techs spread to other squadrons and the approach of improving the medical kits and training became widespread.[24]

The depots served as focal points for many of these supply issues, and in March 1973, the Central Medical Equipment Depot noted that it had made 256 shipments of medical supply packages, of which 50 were deemed "urgent"; such had been the situation for the previous three or four months.[25] Preparing for emergencies was thus part of a depot's routine, perhaps contrary to stereotype, facilities occasionally running exercises to ensure they could respond quickly if need be. Therefore, in 1975, again at the Central Medical Equipment Depot,

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[20] NA, RG 24, v.23,720, 1150-110/A49, Maj K. Commons, for D Pharm Services, to Distribution, 5 Jul 71.

[21] NA, RG 24, v.23,720, 1150-110/A49, Minutes of Meeting of the Advisory Group on Pharmaceuticals and Medical Supplies, 2 Dec 81.

[22] NA, RG 24, v.23,720, 1150-110/A49, Minutes of Meeting of the Advisory Group on Pharmaceuticals and Medical Supplies, 2 Dec 81.

[23] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 27 Mar 00.

[24] Harold M. Wright, *Salute to the Air Force Medical Branch on the 75th Anniversary, Royal Canadian Air Force* (Ottawa, 1999), 111-112.

> Operation Guam went into effect 4 May. 99% of our department staff were contacted by 1700 hours. At 1800 hours our plan of operation was launched and all indents were prepared, signed, posted and passed to warehouse before 2030 hours. As a result of Op Guam, a project has been initiated to produce a complete X Ray dept and a complete LAB dept to be held in standby for immediate issue.[26]

The workload and the need to respond to emergencies increased, if anything, as the Canadian government took on responsibility for an ever-growing list of international military missions beginning in the late 1980s. The Central Medical Equipment Depot reported at the end of March 1991 that

> During the past year CMED was again exceptionally busy with operational commitments, particularly in support of UN operations. In each case, the depot staff responded magnificently to these peaks of workload which provided them with a sense of considerable achievement. This active involvement with numerous operations was seen as a major contributor to the high morale demonstrated throughout the year.

Among the varied missions the depot supported were Operation Sultan, an Observer Group in Central America, where

> Re-supply commitments have continued with success. Significant costs were incurred with vaccines for the rotation of personnel. Total expenditures were approximately $200K. On close-out of Op Sultan, CMED was noted for its outstanding support to the operation which enabled the medical section to have the best medical facility in the area.

Another was Operation Salon, an internal security deployment near Oka, Quebec, where the central depot resupplied the regional depot at Valcartier after the latter had provided necessary materials to units in the field.[27]

In many ways the operations and experiences of the regional medical equipment depots mirrored those of CMED, but in other regards they were sufficiently different to deserve separate treatment here. As the RMED in Debert reported, its role was to "Procure, warehouse, issue and ship medical equipment and pharmaceutical supplies to Canadian Forces Bases, Stations, and Units in the Atlantic Region." It was also expected to "Provide medical equipment and pharmaceutical supplies to Canadian Forces Reserve Units in the Atlantic Region," and "Operate a Medical Equipment Repair Facility. This facility will provide equipment repair capability within the Depot and provide technical advise [sic] to equipment operators at User Units." Finally, the depot was to "Receive, warehouse, issue and ship Emergency Health Services (EHS) supplies..." In 1976, "In fulfilling the medical supply support role, this depot handled a total of 3,076 shipments, weight 623,635 pounds. Although this was an increase over the previous year of some 200,000 pounds, the materiel moved smoothly through the Depot to the User Units with no major delays."[28]

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[25] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 14 Mar 74.

[26] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 10 Feb 76.

[27] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 12 Mar 91.

If anything, the regional depots were more likely to face adversity in times of fiscal restraint than the central facility, since the latter was no doubt expected to take on some of the former's responsibilities if need be. From 1979 to 1982, for example, the depot at Debert noted that

> Austerity has resulted in a drastically reduced Regional Commitment [sic] ... as we desperately try to reach our budget target. Due to back orders, expenditures were still higher than wished... Our budget is very borderline but co-operation of units has been very good. We hope to come close to our target. Repair costs were heavy with the loss of our MERT [Medical Equipment Repair Technician] (to course for 8 months), but these should lessen now that he has returned.

Obviously, contracting out work the medical repair technician usually carried out in-house was costly, so retaining that individual was something of an administrative priority. Still, "Our MERT has applied for and has been accepted into training for Submarine duty. He will be on course for the next month and a half and will be sent to sea when an opening arises in the submarine squadron. This will create a serious problem in this region."[29]

Financial and personnel issues were thus dominant in the Debert depot's reports, the unit relating in 1983 that "The complement for firemen has been reduced to four, so all Mil[itary] personnel at Debert are being trained as Auxiliary fire fighters," taking some of its staff away from their regular duties. Further, "Since last year there have been three 911 Sup-Techs [supply technicians] and three Civilians posted/hired at RMED Debert. This represents a 33% turnover, however, we have been fortunate to receive excellent personnel who have worked into the depot very quickly."[30] Two years later it was the same story with "a 33% change in staff during the past year. A total of 4 retirements and one posting," although at least its finances had improved, with "No problems anticipated in this area."[31]

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[28] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 30 Nov 77.

[29] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 28 Jul 83.

When on 1 October 1989 RMED Debert was assigned to CFHMSS HQ, and was thus no longer part of Maritime Command, its role remained essentially the same.[32] For example, one of its tasks was to store a ship's medical supplies when it came in for refit and to ensure that it received a complete entitlement before returning to sea.[33] The depot's workload increased substantially when the navy began accepting new Canadian Patrol Frigates (CPFs) in the early 1990s and paid off the older destroyers, and in 1992 the depot noted that "this Project will continue to affect RMED until its completion. The decommissioning of ships, establishment of new HMCS's all involve the preparation and issue of a great deal of medical material." Some activities included "destoring the extra medical equipment and NBCW Defence stores from HMCS's involved in Operation Friction," of which more in Chapter Ten, "destoring HMCS Algonquin, Iroquois, Preserver and Fraser between January and March 1991," "initial issue of medical stores to HMCS Halifax—the first CPF," supporting and receiving "medical stores from the Stand Down of CFB Summerside and CFS Sydney," supporting "Mil[itia] con[centration] 91 at CFB Gagetown," and the "Militia Training Centre Aldershot during its peak summer period," and restoring "HMCS Gatineau during summer 91' and "HMCS Preserver during fall of 91." The unit also noted that "A significant portion of RMED operational workload is spent conducting Preventive Maintenance to our Regional units," including Canadian Forces Hospitals Halifax and Oromocto, CFBs Chatham, Cornwallis, Greenwood, Shearwater, and Summerside, Canadian Forces Recruiting Centres in Sydney, Charlottetown, and Saint John, 35 Medical Company, Prince Edward Island Militia District, and Canadian Forces Stations Shelburne and Mill Cove.[34]

The medical equipment depot was, of course, only one focal point for supply, personnel, and operational issues—another was the hospital,

[30] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 28 Jul 83.

[31] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 29 Apr 85.

[32] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 22 Mar 90.

[33] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 3 Jun 86.

[34] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 27 Jul 92.

which as we have seen was under no little threat after the Glassco Commission's report. However, the Canadian Forces Medical Service, the Defence Medical Association, and the Canadian Forces Medical Council were as supportive of the hospital system in the '70s and '80s as they had been in the '50s and '60s. At a 1972 conference, in fact, the Council "re-affirmed its position in relation to the medical support for the Canadian Forces in recommending: that the Canadian Forces maintain their own service hospitals in Canada for the medical care of Canadian servicemen and other entitled personnel; and further recommends that Canadian medical personnel provide medical care for Canadian servicemen serving overseas except for those areas where medical care can be provided by British or American medical personnel to an extent which is considered equivalent to Canadian Standards." The Surgeon General, for his part, referred to the maintenance of CF Hospitals as "the battle."[35]

It would be a successful fight, at least until the 1990s, with the National Defence Medical Centre the first among equals in the Canadian Forces hospital system. Its role, as set out in 1967, was extensive; in part, it was "to provide surgical and medical diagnostic services, outpatient treatment, and casual and definitive care to Service personnel and other selected personnel who are the responsibility of the Federal Government in the local area," as well as "to serve as a centre for the clinical investigation of special categories of patients." In addition, it was "to serve as a clinical teaching establishment for the post-graduate training of Service medical officers... [and] in association with the University of Ottawa to serve as a clinical teaching establishment for undergraduate students." Furthermore, it was expected "to serve as a centre for the advanced training of medical tradesmen "while providing "facilities and personnel for clinical and hospital management research,""facilities for training of service personnel required to undergo post-graduate internships in professions allied to the medical profession," and "medical specialist consultation services to the surrounding Canadian Forces Bases," as well as a Medical Inspection Room for routine exams and sick parade.[36] Little or nothing had been left out.

For the most part, the challenges NDMC faced seemed easily surmountable, although keeping on top of potential difficulties required constant vigilance. For example, in 1972 Captain J.A. MacInnes, responsible for training medical assistants within the facility, reported that his department was "finding it increasingly difficult to cope with

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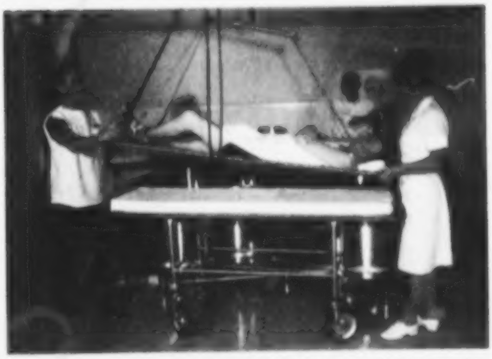
[35] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

[36] NA, 1998-00220-2, Box 1, 1901-0, Col C.A. VanVliet, Commandant, to Distribution, 31 Aug 70.



Treatment at the National Defence Medical Centre, 1967. Canadian Forces Joint Imagery Centre, REC-308

the assigned work load... an increase in establishment is necessary." The organization at the time called for a Captain/Nurse as officer commanding and instructor, with three further instructors at the rank of Captain or Lieutenant/Nurse, Master Warrant Officer Medical Assistant, and Warrant Officer Medical Assistant respectively. However, MacInnes noted, "A review of the training schedule for the next year (1 Aug 72—31 Jul 73) indicates that the training workload at NDMC has been increased greatly." Previously, the instructional facility had drawn heavily on the Nursing Service to ensure that trainees were properly supervised, and although relations between the two sections, MacInnes observed,

> have always been good, it is not always possible for Nursing Service to provide the calibre of individual best suited for employment in a training capacity. Even if it is possible for Nursing Service to provide a suitable individual, it can be argued, and indeed has been demonstrated, that he may not be well motivated towards a job to which he has been assigned in a "hole filling" capacity... Finally, it should be noted that the "standard" instructor/trainee ratio suggested by Training Command for practical training is one to five. The fact that it is not possible to provide this ideal ratio at this time is recognized; however it is considered that the smallest staff that will be able to cope with the work load is six instructors.

He recommended an additional Captain/Lieutenant Nurse and a Warrant Officer Medical Assistant be added to the instructional staff.[37]

Such personnel pressures were universal throughout the medical service, and were certainly not reduced by increasing international commitments. In 1989 one officer, whose Warrant Officer/Second-in-

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37. NA, 1998-00220-2, Box 1, 1920-1, Capt J.A. MacInnes, Med A Trg, to Commandant, 12 Jul 72.

Command had been detailed for peacekeeping duties in Cyprus, saw fit to complain in a memorandum whose administrative language did little to hide the emotions that underpinned it: "Experience has proven," he wrote,

> that workload and supervisory requirements with the general office cannot allow me to work without my Warrant Officer. As I am heavily involved with special management functions touching upon the overall administration of the hospital, necessity painfully calls for the Warrant Officer to become directly involved in assisting and guiding the section heads,

who were master corporals, "in their daily operations, and this despite efforts made to operate otherwise." After further arguments, the captain concluded that "The WO tasks are too important to let him go without jeopardizing the services we are providing to the Hospital."[38] Whether the Warrant Officer remained or stayed is unknown, but the issues involved were clear.

The issues were part of a greater challenge, for though NDMC served as a medical and training facility while providing personnel for operations generally, it was also part of a larger health community. This became evident in 1990, when Dr J. Maloney of Ottawa General Hospital related how

> Eastern Ontario medical representatives have been negotiating with the Ministry of Health for an Air Ambulance Service for Eastern Ontario, to include the area approximately bounded by Trenton, Pembroke, Hawkesbury and Cornwall, the purpose of which would be to service the small communities in this area with access to the medical centres of excellence in Kingston and Ottawa... During preliminary negotiations it became apparent that certain assumptions were being made regarding helipads. In fact there are presently only two landing sites for helicopters in Ottawa: the Ottawa Airport and NDMC's helipad.

There would thus be demand from the health community in general to use the latter, although this raised several questions from NDMC staff, including "what extra staffing, e.g. firefighters and maintenance are required to operate the helipad?" "what are the procedures and standards for the operation and are there any variations for different sizes of aircraft, military or civilian...?" "what equipment is kept on site at NDMC for the helipad operation?" "what are the day/night and weather installations of the operations?" and "what is the extent, responsibility for and cost of snow removal?"[39]

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38. NA, BAN 1998-00220-2, Box 1, 1920-1, Capt C.N. Delisle, H Compt, to H Pers O, 3 Mar 89.
39. NA, BAN 1998-00220-2, Box 1, 7685-1, v.1, Record of Minutes of Meeting in Conference Room 2, NDMC, 4 Sep 90.

Operating on a patient's hand, 1990. Canadian Forces Joint Imagery Centre, REC 90-1218.

The helipad thus had the potential to become a major logistical and administrative burden, and at an NDMC meeting to discuss the issue one conclusion was that "Notwithstanding NDMC's wish not to jeopardize its relationship with other area hospitals, the cost factor could be prohibitive." It would be better to build a new helicopter facility at the nearby Childrens' Hospital of Eastern Ontario (or CHEO), which could be completed in about a year. Another possibility would be to have Ontario's Ministry of Health pay for use of the military helipad under contract, including "considerations of legal liability, maintenance of standards, and provision of all personnel and equipment by the civilian sector. This scenario would include the upgrading of the landing lights..."[40] In the event, the provincial government opted to develop a facility at CHEO.[41]

At Canadian Forces Hospital Halifax the situation was somewhat different, since the pressure to integrate with the larger health community came from within. As the President of the Defence Medical Association explained to Minister of Defence James Richardson, "We have reason to believe that this important strategic hospital will be lost to the Canadian Forces by virtue of the inexorable forces of decay and failure of the Government to replace it." Therefore, he argued, "We strongly recommend that the Canadian Government build a Canadian Forces Hospital to replace Canadian Forces Hospital Halifax which currently is structurally inadequate. We see no reason why such a hospital could not accept and treat patients other than Canadian Forces personnel."

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[40] NA, BAN 1998-00220-2, Box 1, 7685-1, v.1, Record of Minutes of Meeting in Conference Room 2, NDMC, 4 Sep 90.

[41] NA, BAN 1998-00220-2, Box 1, 7685-1, v.1, Emergency Health Services Branch to CHEO, 9 Oct 90.

The latter phrase was obviously a reply to the charge that "It has been determined that a hospital designed solely to provide medical care for the military personnel now at risk in the Atlantic Provinces would not be large enough to be a viable entity on its own." A willingness to treat civilians was, however, insufficient to save the project, and the department decided not to rebuild, although it was hoped that Canadian Forces personnel would be accommodated at a Veterans' Affairs hospital being constructed at the Camp Hill site, near Halifax Dockyard.[42]

One of the best examples of the sorts of challenges detailed above—and many others as well—was Canadian Forces Hospital Europe, located at a Canadian air base outside Lahr, Germany. Operating near what would become the front line in a NATO-Warsaw Pact confrontation, its requirements were somewhat different from those of NDMC and the other Forces' hospitals in Canada. For example, it needed hardened shelters to provide some protection against bombing, including facilities for a casualty clearing post. Installing one was no easy administrative task, however, especially given the financial constraints we have seen in discussing medical equipment depots. As the hospital's Major C. Crymble explained, simply and forthrightly, "The present CCP in the basement of the hospital kitchen is grossly inadequate." He noted that "Its function will be triage and initial treatment," and, if built, "The chemical and fall out protection of the shelter have been proven,"[43] at least conceptually.

The casualty clearing post, however, would be a limited facility whose role would be to deal with casualties from the airfield (in peacetime it would need help from the German Red Cross to deal with a plane crash[44]). Canadian Forces Hospital Europe as a whole, however, had a larger role to play, as Lieutenant-Colonel G.F. McCauley, its commanding officer, explained in 1985:

> CFHE has and will continue to have a field hospital wartime role. Yet, to the best of my knowledge since ... 1973 CFHE has never exercised this role... This is no doubt understandable in view of the paucity of military personnel, the lack of training and experience in field hospital operations, the deficiencies and inadequacies of equipment, stores, drugs and supplies, not to mention the uncertainties of logistic and communication support... While progress has been made over the past 11 years to upgrade this unit's operational readiness, it has been painfully slow and to my mind somewhat disjointed and sporadic. The fact remains that this unit's operational readiness is only marginally better than it was at the outset.

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[42] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Annual Meeting 1975, 19 Sep 75.

[43] NA, 1998-0136-1, 3000-1, Maj C. Crymble, for CO CFHE, to Distribution, 18 Mar 85.

[44] NA, 1998-0136-1, 3000-1, LCol R.L. Stickley, Base Ops O, to Distribution, 9 Mar 87.

He felt that the facility should be deployed as a field hospital on exercise, although "I have no doubt that this will be [a] horrendous undertaking."[45]

In looking at the Canadian Forces Medical Service in its entirety, meanwhile, day-to-day operations could be accurately described with far less dramatic adjectives. A recruit's first contact with the health service remained the medical examination, and the latter was as much a balancing act in the early 1970s as it had been in the mid-1940s. In 1974, for example,

> operational and administrative authorities expressed their concern that the Canadian Forces medical standards were too low. With the forces under strength and our increased commitments such as providing 1200 servicemen for Egypt they could no longer tolerate medically restricted personnel who could not share in the rotations to field or sea duty and overseas postings.

The Surgeon General noted that "During the summer, recruiting had fallen off so badly and so many members were taking voluntary releases, that the same people expressed the opinion that our medical standards were too high." Consultation was required: "This Fall, in order to get "user" input for the standards required for the various trades, the opinions of all the Branch advisers of the various trades and Commanders of all Commands were solicited. We have heard from all of these except FMC," or Force Mobile Command, and

> It is the unanimous opinion that the medical standards for recruits must not be lowered. With the exception of a few minor changes all agreed that our medical standards for serving tradesmen should be maintained. Many expressed the opinion that the older servicemen in more senior rank who became medically restricted could be retained or remustered—but not in their branch, please... This winter, as the cold blast of force reduction is felt, and recruiting is restricted, it is not difficult to anticipate the administrative requests concerning medical standards.[46]

The report, by the Surgeon General, contained not a hint of surprise.

Having found individuals fit to serve, the medical service then attempted to ensure they did not fall prey to the myriad diseases and conditions they might be exposed to. One vector for such calamity being insects, the CFMS sought information on how they could be controlled. In 1970, for example, Brigadier-General J.W. Barr, the Acting Surgeon General, advised the Department of Agriculture that

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45. NA, 1998-0136-1, 3000-1, LCol G.F. McCauley, CO CFHE, to HQ CFE, 29 Aug 85.

46. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 10, Report of Surgeon General.

> As you are no doubt aware it is the intention of our Government to expand Armed Forces operations in northern areas. At the same time we are required to maintain forces at a state of operational readiness to be available for peace keeping duties in any part of the world. This presumably includes all climactic and geographical areas from a tropical to arctic environment.

To the best of his knowledge, he noted,

> no specific Canadian government agency is actively involved, at the present time, in any appreciable research activity in the field of biting flies. In view of our known firm commitment in northern areas it is therefore considered essential that biting fly research activity be encouraged and supported.[47]

It was more difficult to assess "The probability of our involvement in tropical or semi-tropical areas as a component of a peace keeping force," but "it is my opinion that it would be desirable for us to be more fully informed concerning the control of, and potential for harm, represented by arthropod and rodent disease vectors and hosts." In keeping with concerns "that whenever possible the use of persistent pesticides," such as DDT,

> should be avoided, or at least reduced to use in cases where the target organism is a vector of medical importance, I feel that investigations should be carried out with a view to developing control programs which make maximum use of biological control agents, non persistent pesticides, or combinations of these...

Barr concluded with the admonition that "The foregoing objectives can not be achieved by limiting research specifically to the field of entomology. The scope of such investigations, should be expanded to include materials other than pesticides, equipment design and performance, and the development of new procedures to make use of knowledge thus gained."[48] All in all, it was a tall order, and one made no easier by the abolition of the entomologist's position the following year, as noted earlier in this chapter.

Insect control had been a recognized part of disease prevention for most of the century. Another threat, alcoholism, was less clearly defined in the 1970s. As we have seen, the Canadian Forces Medical Service had considered accepting the condition as an illness, but it was still treated with no little ambiguity by commanders and policy-makers, including the Surgeon General. Reporting in 1973, the latter noted that

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[47] NA, RG 24, Acc 83-84/232, Box 23, 1150-110/A71, Brig J.W.Barr, Acting SG, to P.S. Corbet, Dir Research Institute Dept of Agriculture, 29 May 70.

[48] NA, RG 24, Acc 83-84/232, Box 23, 1150-110/A71, Brig J.W.Barr, Acting SG, to P.S. Corbet, Dir Research Institute Dept of Agriculture, 29 May 70.

> Until the past year the CFMS has refused officially to admit that alcoholism was a disease in order that alcoholics would be dealt with administratively. This meant that an alcoholic serviceman with many years service could be released [for] misconduct or as unsuitable for further service with a very reduced pension entitlement... Alcoholism is now recognized as a disease. Appropriate orders have been amended to reflect this. If alcoholism is secondary to a primary psychiatric diagnosis of neurosis or psychosis, release should be recommended,

on medical grounds. However, he added, "If there is no serious underlying mental illness and the psychiatric diagnosis is alcoholism and when the member has failed to respond to rehabilitative measures, he shall be given a permanent medical category of G5 O5 and referred to the Career Medical Review Board," which would most likely recommend release, although given that it was on medical grounds there would be no pension penalty.[49]

Asked if he considered alcoholism to be a self-inflicted disease, the Surgeon General

> stated that perhaps a personality lack or defect in a person is what appears. Perhaps due to the ready availability of alcohol in our society, such persons appear as alcoholics. In some instances he felt they could control themselves in the early stages, but simply don't want to—just as some young service people get in conflict with service law and continue to do so, though they know better. Eventually some lose control and become confirmed alcoholics. Such people cannot be dealt with purely on administrative grounds as they are then sick people and need medical help and help from other sources...

However, he noted, "there is no place for such people in the services as they are inefficient and may in fact be a danger to others."[50] Certainly, a member of the Armed Forces could be released on medical grounds without a blot on his or her character, but with alcoholism such an approach was not a first resort. As the Surgeon General explained, there was "an administrative order that tells a man's CO that he has an obligation to help anyone suspected of being an alcoholic—through his MO. If it comes to the MO's attention first, a Medical Officer advises him to bring it to the attention of the man's CO and that the CO's authority is needed to enforce any treatment. No administrative action can be taken against a man until he has been on "counselling and probation" for a period of at least six months. No attempt is to be made to "gloss over" a man's alcoholism. The earlier he receives adequate treatment, the more likelihood of a "permanent cure,"'[51] if such was possible, an issue that is still controversial.

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[49] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73, Annex 2.

[50] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

When such topics were being discussed in the early 1970s, the participants in those exchanges could not possibly have predicted that fifteen years later tobacco use would be high on the agenda. A normal part of life for generations of North Americans, smoking in the last decades of the twentieth century became more controversial as evidence of its negative impact on health began to build up. By the late 1980s, anti-smoking campaigns had gathered such momentum that tobacco use, except perhaps snuff, had been banned in many government buildings, including hospitals such as NDMC. It was not, however, a clear-cut victory, as Brigadier-General J.J. Benoit, the facility's commandant, noted in 1989:

> The implementation of a total ban on smoking as decreed by Treasury Board regulations has created some enormous difficulties at this unit. It is clear from the beginning that a hospital cannot be given the same consideration as that of an office building. Although we originally had intended to comply with the regulations, it soon became apparent that this would not be possible in a hospital setting. At a recent meeting of the Medical Advisory Committee of this hospital, the physicians have made my office aware that under certain circumstances such as psychiatric or long-term chronic patients smoking should be permissible. I, therefore, had no choice but to set up a smoking area to accommodate patients who are permitted to smoke under the prescription of their attending physicians. Although we believe that the number of patients so affected will be small, the NDMC is seeking a partial exemption of the smoking ban policy as it could affect patient care.[52]

Complicating the issue was that the hospital was in fact a facility shared with Veterans' Affairs, so that "the second floor which is occupied by DVA patients is a home rather than a hospital ward. For some of these beneficiaries smoking is the only physical pleasure left in their lives. Therefore, an exception should also be made for those particular clients." Other hospitals allowed smoking by prescription, and the commandant implored authorities to "Please consider this matter as urgent since the present situation is becoming intolerable and has made my position somewhat ambiguous and open to severe criticism."[53] Rear-Admiral C.J. Knight, the Surgeon General, in this instance speaking for the Chief of the Defence Staff, was sympathetic, and willing to consider NDMC to be a form of accommodation, rather than a work-

[51] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.

[52] NA, 1998-00220-2, Box 1, 1600-5, BGen J.J. Benoit, Comd NDMC, to SG, 28 Feb 89.

[53] NA, 1998-00220-2, Box 1, 1600-5, BGen J.J. Benoit, Comd NDMC, to SG, 28 Feb 89.

place, a definition under which the anti-smoking policy would allow tobacco use.[54]

Insect-borne disease, alcohol, and tobacco use were all characterized by the nature of the threat or issue involved, but for the CFMS some topics were grouped together geographically, especially those that related to Canada's north. As a joint meeting of the Advisory Committee on Defence Against Biological Agents and the Advisory Panel on Infection, Immunity, and Therapy reported in 1971,

> Personnel on Arctic postings may be affected by all the common infectious diseases of the Temperate Zone but, in addition, they may become exposed to ... infections exclusive to the Arctic Zone. Furthermore, distinctive features of the Arctic region, including (i) intense cold (persistently below -25F for several weeks or months) and (ii) small communities which are separated from each other by vast distances, may alter the pattern of transmission of infective agents, thereby giving rise to unusual epidemiological characteristics. During summer, however, high midday temperatures associated with as long as 20 hours of sunlight each day, in areas which abound with forests, lakes and stream[s], combine to provide unusually favourable conditions for massive build-up of populations of hematophagous arthropods, especially mosquitoes and simulids (black flies), which may then serve as vectors of infectious agents.

Military questions thus included the need for a "better understanding of feeding habits and breeding cycles of mosquitoes," and the "possible viruses carried by mosquitoes." Research should thus include a "survey of vertebrate reservoirs of viruses," and the "bleeding of all military personnel before going to Arctic and after return from Arctic duty," for testing at DRES, or the Defence Research Establishment Suffield.[55]

Microscopic agents were therefore a not-inconsiderable threat, and the low temperatures of Canada's north, perhaps counter-intuitively, increased the challenge, as

> Cold will preserve the viability of viruses and bacteria for prolonged periods in water, sewage and domestic waste. Also, the immobility of water in frozen lakes and ponds promotes the buildup of microbes in any bodies of water or areas of snow and ice which become contaminated through imprudent disposal of human excrement and waste.

Clearly, issues such as the "correct siting of water supply intakes far away from human habitation, and equally careful disposal of waste and excrement" were as essential in the Arctic as in temperate zones. Similarly, since armed forces' personnel took their respiratory viruses and

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54. NA, 1998-00220-2, Box 1, 1600-5, RAdm C.J. Knight, SG for CDS, to Comd NDMC, 2 May 89.
55. RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Minutes of Joint Meeting, Advisory Committee on Defence Against Biological Agents and Advisory Panel Infection, Immunity and Therapy, 19-21 Jan 71.

bacteria with them, and since low temperatures had them spend much time indoors, "Individual rooms for sleeping accommodation, or dormitories with barriers between beds, plus adequate exchange of air supplied by a duct located away from the exhaust vent or the garbage dump, etc, will promote dilution of virus or bacteria in air and thus prevent spread of infection."[56]

Further research was pursued in February 1971, J.F. Currie of the Defence Research Establishment Suffield requesting that blood samples be collected from troops engaged in northern exercises, such as one called Northern Viking, both before their departure and after their return. The Defence Research Board having provided a variety of grants to researchers to undertake such studies, the samples could then be examined for antibodies to Chlamydia (organisms that thrive in poor hygienic surroundings), as well as to various viruses, brucella (which can cause infection of genital organs, mammary glands, as well as respiratory and intestinal tracts), tularemia (causing fever and swelling of lymph nodes), and leptospirosis (characterized by mild fever or, at worst, jaundice and renal failure). Other research, by a Dr Joncas, would check the samples for infectious mononucleosis. Currie argued, "It is our considered opinion that the data obtained by the examination of paired sera from troops taking part in New Viking will be an essential step in determining which, if any, infectious disease agents will pose problems as a result of a military presence in the Canadian North."[57]

The Surgeon General had no immediate objections, but such a study could prove an administrative burden given that troops came from all over Canada, and Currie's explanations do not seem to have been designed to assuage such concerns: "it is necessary to obtain samples from persons proceeding to each of the various areas where New Viking is being held," he wrote the Director of Preventive Medicine. "It is also necessary to sample from each area at the various seasons of the year... Of any group proceeding North, we feel at least half of them should be bled... It is necessary to have groups of samples taken from troops who have had no contact with the native population and from groups which have had contact; from groups which have had little contact with biting flies and from groups which have had contact; from groups with little contact with the wildlife and from groups that have had contact,"[58] distinctions very difficult to make in the context of a military exercise.

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[56] RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Minutes of Joint Meeting, Advisory Committee on Defence Against Biological Agents and Advisory Panel Infection, Immunity and Therapy, 19-21 Jan 71.

[57] RG 24, Acc 83-84/232, Box 24, 1150-110/A71, J.F. Currie, for DG DRES, to SG, 22 Feb 71.

[58] RG 24, Acc 83-84/232, Box 24, 1150-110/A71, J.F. Currie, for DG DRES, to DPMed, 16 Mar 71.

Hooking up an IV in the field, 1979. Canadian Forces Joint Imagery Centre, CLC 79-862

Still, by 1975 researchers had gained some insight into the types of disease endemic to Canada's north after examining 640 blood samples from Canadian Forces personnel. Comparing them with samples taken from animals, they reported that 26 animal samples showed antibodies to St Louis encephalitis virus or SLE, encephalitis being inflammation of the brain. Further, 8 wild rabbits carried antibodies against another form of encephalitis called CEV, or California encephalitis virus, as did 9 rabbits from the Inuvik area and 17 from the Hay River area. Of 26 samples collected from CF personnel engaged in airstrip construction, 24 carried antibodies to Epstein-Barr virus, though none developed symptoms, fortunate given that the organism is a cause of lymph cancer. None of the other 640 samples taken from CF personnel showed antibodies to any of the micro-organisms being studied,[59] so although there was good reason to take precautions, there was no cause for alarm.

All of the above, from insect research to immunization to anti-smoking campaigns to arctic investigations, was aimed at disease prevention or simply the general improvement of people's health, but there were, of course, other threats to the lives and limbs of Canadian Forces personnel, so the CFMS had to prepare for the treatment of mass casualties. According to a Brigadier Large of the Royal Army Medical Corps, who had been invited to speak on the subject in 1974, such a situation could be defined "as that occurring when the numbers of casualties being received at any medical unit are such that the medical unit cannot adequately perform its primary role." Thus, according to this definition, "If the primary role of the unit is treatment (as in a hospital) a mass

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[59] RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Minutes of the 75/1 Meeting of the Advisory Ctee on Military Preventive Med, Apr 75; Annex C.

Bandaging the hand of an injured gunner in the field, 1979
Canadian Forces Joint Imagery Centre, IW 79-570

casualty situation arises when the number of casualties are such that the accepted standards of surgical treatment can be provided for only a small proportion and there is no likelihood of normal standards being available for the remainder, within the foreseeable future... In a field ambulance, whose primary role is collection and evacuation, a mass casualty situation can be said to have arisen either when so many casualties have occurred that they cannot be collected, or when they accumulate in unmanageable numbers at the field ambulance Main Dressing Station, owing to a breakdown in the means of evacuation rearwards."[60]

One possible source of such casualties, obviously, was a nuclear war, but

> this is by no means essential, although by its magnitude it is the event which will pose the medical services with their greatest problems. Nevertheless, one must remember that non-nuclear mass casualty situations in war have occurred before, so the problem is not entirely new... Mass casualty situations may also occur in peace, for instance in underdeveloped areas in times of natural disaster. They may be widespread or localized to a specific area; and for this reason it is for the SMO [senior medical officer] at the scene to declare that, because of a shortage of medical resources in relation to the task presenting itself, mass casualty conditions prevail.

Regardless of the cause, factors to be taken into account included "The number and type of casualties (burns, missile injuries, radiation, chemical)," "Expected time of arrival of casualties at the hospital," "Expected rate of arrival in numbers per hour," "How long will it be after wounding before the casualties will get to the unit," "Whether or not the casualties have already been given some form of treatment," and "Manpower available to deal with the expected flow of casualties." There would thus be requirements for traffic control, open space, the thorough examination of patients, and the correct allocation of priorities.[61]

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[60] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 6.

Traffic control took two forms, that of vehicles—of all descriptions—bringing patients to be treated, and that of the patients themselves as they were moved from station to station within the system. Space would obviously be a problem, the average 600-bed hospital geared to deal with about ten seriously-injured people at a time, whereas in time of disaster 50 could well arrive within the span of a few minutes:

> This will mean the utilization of accommodation not primarily intended for casualty reception such as corridors, rest rooms, waiting rooms, dining rooms and so on. In order that these rooms can rapidly be converted to cope with the emergency, it is important that they be earmarked beforehand, and that their use as reception areas be made abundantly clear in unit SOPs,

or standing operating procedures.

> In wartime reconnaissance look for a gymnasium, assembly hall or even a barn for your reception. And if no building large enough is available, then go for canvas... Whatever is used, building or tentage, the reception department must have easy and uninterrupted access and egress for ambulances, and there must be space for vehicles to pile up outside while awaiting unloading. If possible, a waiting area for ambulances should be provided from where they can be called forward as required for unloading.

The reception area would need space for at least a hundred stretchers, with enough room between them for medical practitioners to examine the injured.[62]

Those same practitioners would have some very difficult decisions to make, for

> there must be a change in surgical philosophy. The usual system, in which priority is given to the severely wounded, will have to be abandoned, because conventional operative surgery has very little to offer when faced with overwhelming numbers. The aim must rather be to do the greatest good for the greatest numbers, having in mind the need to return to duty any man who can be rendered fit to fight, and this will be achieved NOT by long term operative surgery but by concentrating effort on effective first aid and non-operative measures such as dressing, splinting and resuscitation.

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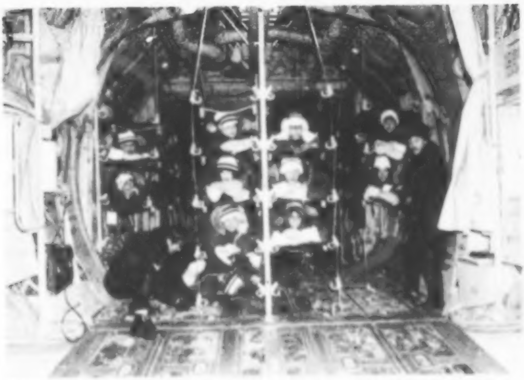
[61] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 6.

[62] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 6.



Practising the movement of large-scale casualties in winter, 1976. Canadian Forces Joint Imagery Centre, IE 76-7-15

As for subsequent treatment, "Surgical procedures will be necessary, of course, but they must be limited to 20 minutes per patient on average and this means that surgery will be confined to emergency procedures for saving life and limb, such as completion of amputations, control of accessible haemorrhage," and the treatment of compound fractures.[63]

Brigadier Large recommended patients be divided into four categories. First would be the "Minimal treatment group M0," who could be dealt with on the spot and left to care for themselves. Second was the "Immediate treatment group M1," who needed first aid to save "life or limb," such as the control of haemorrhage. Third came the "Delayed treatment group M2," made up of those requiring time-consuming surgical treatment but who had to wait for the M1 group to be dealt with; someone with large muscle wounds would be an example of a patient in this category. Finally, there was the "Expectant treatment group M3," where procedures "would be difficult, time-consuming and complicated," such as burns over more than 30 per cent of the body or high and lethal amounts of radiation. Large doses of narcotic analgesics might be necessary, and "These patients should not be abandoned, but every effort should be devoted to their comfort and the possibility of survival with even the most alarming injuries should always be kept in mind."[64]

Military medical practitioners could not, however, always wait for patients to be brought to them, whether in a mass casualty situation or otherwise, and occasionally had to seek them out and transport them to where treatment could be provided. Perhaps the most dramatic example of this occurred when Canadian civilians had to be airlifted after contracting life-threatening diseases in far-flung corners of the globe. In 1974, the Surgeon General noted that "The number of aeromedical evacuation flights increased again in 1973 to 392. This increase was made up entirely of civilian patients... The CFMS co-ordinate these evacuations and provide in-flight medical teams. In March of this year a request was received to evacuate a Canadian civilian from Ibadan, Nigeria, who had a highly infectious disease—Lassa fever. Fortunately, at the last moment the patient improved and the flight was cancelled but it raised interesting problems regarding the protection of aircrew and medical attendants in flight and finding a hospital to accept such a patient in Canada. In co-operation with Health and Welfare Canada, NDMC is studying the feasibility of setting up a suitable isolation unit."[65]

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[63] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 6.

[64] NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 6.

A policy on the transportation of patients suffering from such diseases was soon forthcoming, the Advisory Committee on Military Preventive Medicine producing a paper in 1975. It explained that there had been five outbreaks of Lassa fever since 1969, and noted that "The Canadian Government first became involved in 1972, when a request was made to air evacuate a case from Sierra Leone and again in 1974 with respect to a female in Nigeria, one of five presumptive cases." As we have seen, evacuation of the latter was cancelled, but the CFMS still had to be ready for the day when it would in fact have to transport a victim of Lassa or similar disease. One problem the committee discussed involved "clearances from authorities of countries or regions when an aircraft is required to land for refuelling or other reasons" and "approval ... from the receiving hospital at the destination, in the light of transporting a case with a presumably highly infectious, yet little understood, disease."[66]

Technical matters also needed to be addressed, and

> Because the air flow patterns in the air conditioning and ventilation systems within the two types of Canadian Forces long range transport aircraft are not fully understood with respect to transmission of micro-organisms, a study is being carried [out] to evaluate the dissemination of such organisms in the C130 (Hercules) and Boeing 707 aircraft belonging to the Canadian Forces. It is proposed to disperse non-pathogenic micro-organisms and by use of a large volume air sampler and contact swabbing

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65. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 10.
66. NA, RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Minutes of the 75/1 Meeting of the Advisory Ctee on Military Preventive Med, Apr 75.

> to study the distribution of microorganisms with a view to determining the optimum location, inside an aircraft, for a patient with an infectious disease, in order that communicability may be kept at a minimum.

The committee concluded that "the most valid reason for air evacuating a patient with Lassa Fever must be only when it is in the best interests of the patient to do so, having established that facilities are not adequate at the hospital where the case is located. Once it is decided that air evacuation should be undertaken, appropriate clearances have been made and it is ensured that the receiving hospital will accept the patient, a volunteer medical team must be selected. Strict barrier nursing techniques must be applied en route. The ideal time for evacuation is around the fifth day of the disease, as death tends to occur between the 12th to 14th day."[67] We now know that Lassa fever is similar to hantavirus, in that it can be contracted by contact with the droppings or urine of small rodents, although it can also spread through person-to-person contact by way of blood, tissue, secretions, or excretions. Casual contact will not, however, allow the virus to spread, so procedures detailed above were in fact more comprehensive than necessary—though that is not cause for criticism.

Although Cold War mobilization effectively ended in the 1960s, subsequent years saw the Canadian government, and hence the Armed Forces, focussing on operations that, if not warlike, were still global in nature. In a sense, the period from the 1970s to the 1990s was one of very slow demobilization, which even a dramatic increase in the number of peacekeeping missions after 1988 failed to halt. If anything, however, the challenge for the medical service was even greater after the fall of the Soviet Union, for with the Warsaw Pact no longer the single clear *raison-d'être* for the Canadian Forces, medical practitioners and supporting staff needed to prepare for a wide range of missions in dozens of different environments. The CFMS was no longer going to focus on keeping the USSR and its satellites out of western Europe, but that would not mean that its horizons had shrunk. Quite the opposite, as it prepared to deploy on any operation requiring medical assistance anywhere in the world.

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[67] NA, RG 24, Acc 83-84/232, Box 24, 1150-110/A71, Minutes of the 75/1 Meeting of the Advisory Ctee on Military Preventive Med, Apr 75.

Chapter Nine

Preparing for War: Recruiting, Training, and the Field Hospital in the later Cold War

Although in Canada the Cold War had been de-emphasized by the end of the 1960s, the country's armed forces still bore the responsibility of preparing for the worst; it was just that now the nature of what the worst could be was not as clear as before. As had been the case since the First World War, such preparation took two main forms, individual training and unit rehearsals, the latter usually conducted on exercises in the field. There was also a planning and logistical aspect to such preparations, especially in regards to possible operations within NATO, which in spite of other developments remained the doctrinal centre for the Canadian Armed Forces and their supporting branches, including the medical service.

Of challenges there were many, the first being to ensure that the CFMS had the strength to carry out its uncountable tasks. In 1973 it was comprised of 320 medical officers (of an establishment of 341), 205 medical associate officers (the same as establishment), 366 of 374 nursing officers, 1327 of 1375 medical assistants, 28 of 27 operation room assistants, 80 of 81 laboratory technicians, 77 of 76 X-ray technicians, 67 of 69 hygiene technicians, and 38 of 39 bioscience technicians.[1] It should be noted, however, that such numbers left room for improvement, and although the 1973 staffing levels represented what the Surgeon General called a "stable-state," the service was short 16 of 69 pharmacists, or 21 per cent. Still, it was anticipated that "this shortfall should be reduced considerably by mid-1975, by which time 15 officers who are now engaged in subsidized pharmacy programmes at various universities will have completed their training..." As for the Medical Officer Training Plan (previously the 45-month plan), it was noted that

> Normally, the minimum annual intake into the MOTP should be approximately 50. This intake is necessary to offset the normally high annual attrition that occurs each year when those Captain medical officers who, having discharged the three year obligation to serve incurred as a result of their prior subsidization, elect to leave the Forces to take up civilian practice.

Past recruitment had not kept pace:

> we have been running at about one-half of this annual required intake for the past several years. Needless to say this has given rise to concern over the future ability of the CFMS to provide effective medical support in the face of a steady decline in a critical manpower resource—the captain medical officer. This year, however, a concerted effort on the part of the Director of Recruiting and the Command Surgeons, combined with what is seen to be a possible change in student attitudes in the universities towards the subsidized medical plan offered by the Forces, appears to be reversing a downward trend.

Still, the Surgeon General only expected to recruit 40 candidates of a quota of 65.[2]

At least the navy was not likely to increase demand, since that service happily relied on Petty Officer Medical Assistants to take care of the needs of ships at sea; only in its "fattest days," one admiral related, had it sent medical officers to fill that role.[3] *Bonaventure* was no more, having been sold for scrap, so only the resupply ships, of which there were never more than two operational at any one time, had medical and nursing officers as part of their complements. None the less, there were shortages in the Armed Forces as a whole, and although in 1974 the Surgeon General could report that 55 medical officers would begin duty in 1977 followed by an even larger, though undetermined, number in 1978, "there would be a hiatus for the next two years which would have to be met by hiring civilian staff with the consequent "dent" in his budget."[4]

Recruiting medical officers was just one personnel issue policy-makers had to face—another was that of gender, although over time the topic required less administrative and policy attention as the division of labour between men and women was gradually erased. In 1973, for example, the Defence Medical Association noted that

1. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.
2. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.
3. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974.
4. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974.

> The Trade of Nursing Assistant, previously comprised only of approximately 100 female tradeswomen has been deleted from the medical trade structure and these girls [sic—actually adult women] are now classified as Medical Assistants. This change was designed primarily to enhance the long term career opportunities of females in the CFMS and has met with a favourable response from the women involved.[5]

In regards to other trades and classifications the situation was somewhat different, although in 1974 it seemed as if the numbers of female doctors would begin to increase, the Surgeon General reporting that there was "considerable variation" when it came to the numbers coming forward, "one next year, two the following year and twelve in the year after that." Furthermore, one woman was in the MMTP (Military Medical Training Plan), which allowed officers from other classifications to obtain medical qualifications, and several female pharmacist officers were in ROTP (or Regular Officer Training Plan, which paid for university in return for future service). Other women pharmacists were entering the Armed Forces directly. The converse was also true: "there were some five male nursing officers—most of whom were considered as "career officers" which was not always so for women nursing officers whose average service in the Service was some two years," no doubt because of the demands of family life—programmes like daycare were almost non-existent at the time. Nevertheless, in relation to gender, "This situation is carefully watched in order not to take in too many male nursing officers who, if they stayed in the service as a career, might occupy virtually all the Senior appointments in the nursing branch in about 10 or 12 years."[6]

Although in danger of getting ahead of the story somewhat, the reader might be interested in how the gender issue worked itself out in the decades that followed. This author is not an advocate of the "great men and women" approach to such topics, but individuals can indeed serve as examples of how particular trends evolved over the years. Wendy Clay, for one, was the first Canadian woman to earn her military pilot's wings in 1972, and was also the first woman to earn her degree in aviation medicine; in June 1992 she became the Deputy Surgeon General, being promoted two years later to the rank of Major-General and the position of Surgeon General and Chief of Health Services. At about the same time, in the early 1990s, all four medical manoeuvre units were commanded by women: Major Hilary Jaeger of 2 Field

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[5] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73; Annex 2.

[6] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974.

Ambulance (previously the Senior Medical Officer in Sarajevo), Commander Marg Kavanagh of 1 Field Ambulance (previously the Task Force Medical Advisor for Operation Friction, Canada's contribution to Gulf War operations), Lieutenant-Colonel Bev Anderson of 1 Canadian Field Hospital (the first Nursing Officer to command the unit), and Lieutenant-Colonel Marianne Savard of 5e Ambulance de Campagne. Later in the decade Brigadier-General Lise Mathieu became the first non-clinician (she served as a Health Care Administrator) to be appointed to the position of Director-General Health Services and Commander of the Canadian Forces Medical Group, in effect the head of the CF Health Services Community.[7]

In the 1970s, one could say that the medical service was at least cognizant of the personnel issues it had to deal with to carry out its mandate, even if certain problems, such as a shortage of medical officers, were never entirely resolved. The CFMS was, however, part of a larger society, and developments within that wider whole sometimes created new challenges in regards to managing officers and other ranks. An excellent example was bilingualism, a policy enacted in the early 1970s to ensure, in part, that both founding European language groups could take advantage of career opportunities in the public service, armed forces, and RCMP. Implementing it, however, could not but aggravate an already complex personnel challenge, as Brigadier-General J.J. Benoit, the commandant of NDMC, discovered in 1989. A member of the emergency room staff having complained concerning the implementation of the bilingualism policy, the brigadier responded in a letter distributed to all branches of the hospital:

> I am sure that you know that the Bilingualism Act was passed in Parliament unanimously by all political parties... The Department of National Defence and NDMC in particular have been accused of making very little progress in the past 15 years towards bilingualism. We have been instructed to make up for this discrepancy in the shortest time possible. The complaints about the lack of bilingualism at this Unit certainly would not go to you, but my office is at times inundated with complaints, especially from people who cannot receive communication in their preferred official language at the point of entry to the hospital, which is your department,

that is to say the emergency room. Furthermore, second language training had been offered the individual in question, and "Although some of the training has to be done on your own time, you must admit that it is indeed offered." The brigadier also saw fit to add that "the philosophy of the Bilingualism Act is not only to provide service in the official language preferred by a client, but to be prepared to offer this whether it is demanded or not." The complainant had incumbent's rights, meaning he or she was not required to become bilingual, but the commandant still had the option of employing that individual elsewhere in the hospital.[8]

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[7] CWO M. McBride to Bill Rawling, 18 Feb 03

To understand the scope of the problem, it must be made clear here that such controversies were in addition to other personnel issues that already seemed infinite in their variety. To take just one group as an example, that of physiotherapists, in 1978 there was a shortage of Direct Entry Officers (or DEO), that is to say people already qualified who wished to enter the armed forces, so a Regular Officer Training Plan (or ROTP) was initiated, where students of that discipline would have their expenses taken care of by the crown in return for a period of service upon graduation. According to Colonel G.J. Bérubé, the Chief of Medicine at NDMC, "Prior to the inception of the Regular Officer Training Plan in Physical Therapy in 1978, Direct Entry Officers in Physical Therapy had to have had a minimum of two years' graduate experience before being qualified for acceptance into the Canadian Forces." The reason was that they were likely to be posted to institutions where they would be unsupervised: "In sole charge they would often have no other person for miles around in their field to provide advice or assistance when required."[9]

An instance was provided by an officer candidate who wrote to the head of one hospital's physiotherapy department to note, in part, that "I'm concerned that I will be working in a small department as a sole therapist immediately following graduation."[10] The reply from the physiotherapy department at NDMC should have been reassuring: "It is understandable that you are concerned about working in sole-charge following your graduation without prior experience to develop your clinical skills and clinical confidence. You may rest assured that it is policy to either post all our new ROTP graduates to the National Defence Medical Centre for clinical experience, or to attach them to a senior Therapist at a Base Hospital prior to sole-charge work. It is preferable that this ... experience is conducted over nine months to a year, however, this may be shorter depending on the Therapist's progress in this period. You will also be introduced to the administrative, documentary and management details required for the successful management of your own department, caseload and demands that will be expected of your position." The department head suggested that the

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8. NA, 1998 00220 2, Box 1, 1901 0, BGen J.J. Benoit, Comd, to Distribution, 16 May 89.
9. NA, BAN 1998 00220 2, Box 1, 4500 0, v 1, Col G.J. Berube, Chief of Med NDMC, to SG, 16 Jan 85.
10. NA, BAN 1998 00220 2, Box 1, 4500 0, v 1, OCD to Cold Lake Hospital Physiotherapy Dept, 1 Mar 84.

officer candidate, who was studying in Vancouver, get in touch with the hospital in Esquimalt to gain experience.[11]

Still, as Bérubé saw it, the Canadian Forces had a problem in that they were taking in a maximum of three physiotherapists a year under ROTP, and "It appears that the perpetual shortage of Physical Therapists in the CF does not permit clinical experience of a reasonable amount of time for inexperienced new graduates ... with experienced therapists either on Base or at the NDMC." For example, "one Lt who graduated in BC in Dec 84 is spending one month or so ... at CFB Esquimalt. In Feb 85 this Lt, considered unready in part by the senior therapist, has to take over the department at CFB Borden, whose incumbent resigns then." (Whether this was the same practitioner who was given reassurance a year before is unknown.) Another instance was a therapist who spent six weeks at the National Defence Medical Centre before being sent to a base. "His sports afternoons were spent in teleconsultation with the Senior Therapist at the NDMC with regard to difficult conditions encountered or treated." A final example of the problem was provided by the hospital's senior therapist, who "received a call from a CFB Therapist who explained that a ROTP candidate at a nearby University had been spending some hours with her each week because she was terrified of the thought of having to run her own department immediately following graduation." A troubling pattern was becoming clear: "it is feared that the urgency experienced in filling vacancies without much consideration for the needs of the new graduate or the necessary basic graduate experience for best patient care is rapidly becoming a precedent."[12]

Physiotherapists may have represented an extreme example, however, and one part of the personnel challenge that seemed to generate far less angst was the recruitment and retention of nursing officers: "To continue to provide the highest possible standard of nursing care in hospitals and clinics, the Canadian Forces is currently recruiting only those nursing officers having a minimum of two years post graduate experience," the Defence Medical Association announced in 1973. Even with such standards, there were only a dozen vacancies of an establishment of 378, with 142 of 366 experienced nurses proving to be bilingual and 170 having completed advanced nursing courses. Ten were male, three having been recruited that very year. Also, "For the first time, a senior nursing officer is attending the year long course at the

[11] NA, BAN 1998-00220-2, Box 1, 4500-0, v.1, Maj B.P. Warrington-Kearsley, Head/Physical Therapy Section NDMC, to OC dt, 4 Apr 84.

[12] NA, BAN 1998-00220-2, Box 1, 4500-0, v.1, Col G.J. Berube, Chief of Med NDMC, to SG, 16 Jan 85.

Canadian Forces Staff College, Toronto and the Director of Nursing Services has just recently completed the 11 month National Defence College course,"[13] as required for promotion to field and general rank, respectively.

The following year the situation seemed less optimistic, though as it turned out the difference was only one of degree. Reporting to the Defence Medical Association, the Surgeon General noted that

> Recruiting for the regular force nursing service has been slow during the past year due mainly to the enrolment requirement of a minimum of two years post-graduate nursing experience and greater competition from the many civilian employers who are now authorized to pay higher salaries. However, the overall manning level is being maintained and the only unit vacancies are those created by nursing officers undertaking military or professional training.

Still, the situation was somewhat foreboding in light of a study by an interdepartmental committee on the nursing occupation in the public service. It concluded that

> there is a serious amount of dissatisfaction among nurses in the Federal Service, which calls for prompt attention by management at all levels, in the interest of ensuring both a good quality of service and a good level of morale and staff relations... Although the area of greatest dissatisfaction among nurses is that of compensation the nurses also express a good deal of concern about their proper utilization, their opportunities to progress in their careers and to a lesser extent about opportunities for professional development.[14]

The situation regarding nursing officers was not all positive, therefore, as exemplified by a complaint from Major M.P. Lavoie, an operating room supervisor: "The posting of an on-course Op R[oo]m trainee to the position of head nurse immediately upon graduation is viewed with great concern," the major wrote, and "It is regrettable that an unprepared person is being placed in a specialty area without providing the opportunity for adequate experience to re-enforce their formal training." In way of explanation, the supervisor noted that

> Formerly, when the Op Rm Nur[se] qualification was obtained through civilian courses of six months duration, the trainee had a minimum of four months to one year OJT [on the job training] before attending these courses. Currently, the Nursing Officer comes on course with no Op Rm preparation and then upon graduation is expected to function at the same level of expertise as the graduates of the civilian courses. From observation of the CF Course graduates posted to my staff, it has been

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13. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 15-16 Nov 73.
14. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Apps 10, Report of Surgeon General.

> my experience that at least four to six months is required before they become competent Op Rm nurses.[15]

The major warned that the new graduate might encounter problems including "the day to day scheduling of surgical cases," "dealing with the surgeons and their "demands"," "the administration of an Op Rm, including the writing of PERs [personnel evaluation reports], with which the new head nurse may or may not be familiar," and "dealing with very experienced Op Rm staff who may ... bypass the head nurse in matters of techniques without her even being aware of this happening." Such staff might also "have her initiate changes that are not proper Op Rm techniques but are of benefit to the staff in time and labour." Another issue was "the inability, due to lack of experience, of adequately performing the duties of a scrub or circulating nurse on a major surgical case." Therefore, Lavoie concluded, "I recommend... two to six months post training experience before being placed in the head nurse position; or... in the future, a period of OJT in one of the CF Operating Rooms prior to commencing the Op Rm Nur Course."[16] The Director of Nursing, Lieutenant-Colonel S.M. Robinson, agreed.[17]

Taking a qualified nurse and turning her (and occasionally him) into a qualified armed forces medical practitioner was thus no easy process. In 1980 the medical service's school introduced "A completely revised Basic Nursing Officer course," lasting 28 training days, or six weeks if one took statutory holidays and administrative days into account. The course included "greater emphasis on medical administration[,]... medical services orientation and clinical topics,"[18] but there was much more to a nursing officer's education. Before arriving in Borden for the above training, she or he underwent a process of indoctrination no different from that of other recruits. Lieutenant (Navy) Rebecca Patterson later recalled her training in 1989: "I spent 13 weeks in Chilliwack, BC, doing basic training with all the other new officer cadets. Infantry tactics, leadership skills, military indoctrination and intense physical training were all part of the training. I wasn't recognized as a nurse until almost a year into my military career!"[19] Later, she might have undergone training in more specialized work, such as intensive care, operating room nursing, psychiatric nursing, community health nursing, or obstetrics,

[15] NA, BAN 1998-00220-2, Box 1, 4500-0, v 1, Maj M.P. Lavoie, Op Rm Supervisor, to D of N, 29 Mar 83.

[16] NA, BAN 1998-00220-2, Box 1, 4500-0, v 1, Maj M.P. Lavoie, Op Rm Supervisor to D of N, 29 Mar 83.

[17] NA, BAN 1998-00220-2, Box 1, 4500-0, v 1, LCol S.M. Robinson, D of N, to NDHQ/DPCO/NUR and Surgen for DNS, 12 Apr 83.

[18] DHH 1326-2676, Pt 4, CFMSS Annual Historical Report, 23 Feb 81.

[19] E.A. Landells, *The Military Nurses of Canada: Recollections of Military Nurses* (White Rock BC 1995), 522.

the latter "a basic course required prior to a posting to an isolated area."[20] (Remember Patricia Gill's experiences in Chapter One.)

Yet another crucial group of practitioners within the CFMS was made up of medical assistants, whose importance was heightened by the perpetual lack of medical officers. As a result, many of them needed to be trained to the 6B, or Warrant Officer level. The problem, however, was that such training "must be conducted by a knowledgeable, interested medical officer who appreciates the need for a one to one supervised preceptorship." The situation was further aggravated by the standards set for medical assistant NCOs, where

> only those Med As that are trained for and capable of independent duty should do independent duty. The only training level considered suitable is the 6B Med A qualification. If commanders are using tradesmen who are not qualified 6B, it is the senior medical officer's duty to inform the commander that the servicemen under his command are not getting qualified care and may in fact suffer.[21]

We have already seen the kinds of topics medical assistants were expected to cover in their training, and if anything the list grew longer in the 1970s and subsequent decades. To provide just one example, in 1974 NATO adopted a new doctrine relating to nuclear, biological, and chemical warfare, and that year, on 5 June, an exercise was conducted in Petawawa in which

> sixty casualties were evacuated from forward positions through the normal casualty evacuation chain, under chemical conditions which were simulated by the use of a new compound which has many of the physical properties of a nerve agent. The trial was designed that it was possible to detect, not only how much agent the casualties themselves would have absorbed, but also how much would have been transferred to medical personnel attending them and to other casualties not attacked by the agent. Although contamination was heavy, it was felt that the sources of contamination were identified and that casualty handling procedures can be corrected.[22]

In 1980 the repertoire was further increased with the addition of two Nuclear Accident Response courses, one for officers and one for other ranks: "These courses are unique in that they are designed to be conducted concurrently with students from both courses joining in a final exercise."[23]

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[20] Col Marielle Gagne, Address to Nursing Sisters Association, 10 Jun 94, in E.A. Landells, 541.

[21] RG 24, v 23,763, 1150-110/877, Minutes of the Surgeon General's Advisory Committee on Medical Assistant Training, 26-27 Apr 77.

[22] NA, RG 24, v 21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Apps 10.

[23] DHH 1326-2676, Pt 4, CFMSS Annual Historical Report, 23 Feb 81.

The centre where medical assistants and officers received much of their training was the Canadian Forces Medical Services School (or CFMSS, previously the Canadian Forces Medical Service Training Centre) in Borden, which in 1980 oversaw 33,930 student days of indoctrination,[24] though such statistics belie the administrative complexity involved. Courses in 1981 included ten at the TQ3 level (required to become a medical assistant; two of the courses were for reservists), six at TQ5 (for corporal), two for TQ6A (for sergeant), one for TQ6B (for warrant officer), two classes of the Basic Nursing Officer's Course, one for advanced nursing, another for pest control, three for medical doctors, nine classes to provide first-aid instructors, one for surgery, two for basic officer training, two to train medical officers more generally, one to indoctrinate medical associate officers, one basic field course, one advanced field course, and one cryptically designated as "NAR", for nuclear accident response, as mentioned above.[25]

The school was busy, and not just in running indoctrination programmes. In 1986, when training days totalled 34,804, it also provided mock casualties for a base defence exercise and provided much assistance to St John's Ambulance, including the provision of simulation services (applying makeup so people would look like casualties) for one of the organization's disaster exercises, at the York County Hospital and the Green Acres Nursing Home. Simulations were also provided for the 16th Ontario Provincial Open First Aid Competition and the Simcoe-Parry Sound St John Ambulance Corps Competition. Furthermore, the school sent an umpire on a major exercise and saw to the training of its own personnel, 29 officers and 37 staff members attending various courses, 22 of which were designed to improve their skills as instructors.[26] Subsequent years followed a similar pattern.

In 1989 training days totalled 34,668,[27] but this statistic would decline thereafter. As the school related in reporting its activities for 1990,

> The anticipated inability of the supporting base to meet the accommodation requirements for the training forecasted prompted the School to critically review its training with the intention of identifying possible redundant and inappropriate training. Recommendations were submitted and subsequently approved resulting in a one third reduction in training time for one third of the Regular Force courses conducted at the CFMSS.

However, "Significant improvements were made in the implementation of both the Basic Nuclear Biological Chemical—Nuclear Emergency

[24] DHH 1326-2676, Pt 4, CFMSS Annual Historical Report, 23 Feb 81.
[25] DHH 1326-2676, Pt 4, CFMSS Annual Historical Report, 23 Mar 82.
[26] DHH 1326-2676, Pt 5, CFMSS Annual Historical Report, 9 Feb 87.
[27] DHH 1326-2676, Pt 5, CFMSS Annual Historical Report, 6 Mar 90.

Response Medical Aspects Course and the Basic Field Medical Services Course." Total training days were 30,895,[28] dropping to 27,388 in 1991, and 15,519 in 1992, and then rising to 19,569 in 1993 before dropping again, to 11,960, in 1994. Such a trend did not seem to engender much anguish, however, Lieutenant-Colonel S.F. Cameron, the school's commandant, stating that "This Unit has effectively met its assigned objectives in 1994."[29] Perhaps there were simply fewer people to train given cuts elsewhere in the Armed Forces. The school, however, did not see its responsibilities diminish—quite the opposite—and in 1996 it took over courses for reservists that had previously been administered by Mobile Command and its successor, Land Force Command Headquarters.[30]

Clinical training and experience were, of necessity, outside the school's purview, such indoctrination needing to be carried out in hospitals. As we have seen, the requirement for such continuing education had been one of the prime reasons for maintaining military hospital facilities across the country, but with the fall of the Soviet Union in 1991 and subsequent budget cuts at DND (in effect another round of demobilization similar to those of the mid-1940s and early 1970s), many of these institutions closed, including the National Defence Medical Centre. There was thus no alternative to sending military personnel into civilian hospitals for clinical work; one trial for such a process began in September 1996 in Edmonton. The following June sufficient progress had been made to sign a memorandum of understanding which "described the placement of CF health care personnel in civilian health care facilities for the purpose of maintaining clinical competence." Personnel detached from the medical service worked at four locations: the Edmonton Garrison Clinic, the Sturgeon Community Hospital and Health Centre, the Royal Alexandra Hospital, and the University of Alberta Hospital. By the end of 1997, Detachment Edmonton, as it was called, had 68 Canadian Forces members.[31]

One of these was a surgeon, who

> worked at the Garrison clinic where he treated military members in two half-day clinics and one half-day minor surgery per week. Every second week he spent two days at 4 Wing Cold Lake seeing military members and dependents, performing minor surgery or responding to emergencies. He also conducted semimonthly endoscopy clinic [for examining inside

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[28] DHH 1326-2676, Pt 5, CFMSS Annual Historical Report, 19 Mar 91.

[29] DHH 1326-2676, Pt 5, CFMSS Annual Historical Report, 27 Mar 92; 30 Mar 93; 17 Oct 94; 18 May 95.

[30] DHH 1326-2676, Pt 5, CFMSS Annual Historical Report, 26 Mar 97.

[31] DHH 1326-3572, CF Med Gp HQ Det Edmonton Annual Historical Report, 18 Mar 98.

> the human body], and monthly OR. He took call weekly and one weekend a month at Sturgeon Hospital. The surgeon is still under employed,

at this rate, it was reported, although he "was deployed with OP Palladium [in the former Yugoslavia] during the reporting period." Another doctor was an internist, "part of the Division of General Internal Medicine at the University of Alberta Hospital. He participated in the clinical rotation, teaching, and conducting research activities." Reports listed his accomplishments: "Weekly he runs a half-day clinic at the G[ar]r[iso]n clinic and a monthly clinic at 4 Wing Cold Lake. He also performs semimonthly endoscopy clinic and cardiac stress test at Sturgeon Hospital. Maintenance of competence is well achieved." Reports also mentioned two psychiatrists, who

> worked in Sturgeon Hospital seeing military and civilian patients. Their clientele is predominantly military. One of the psychiatrists goes to 4 Wing Cold Lake for 2 days every 2 weeks. They are slowly working on building the volume of a clientele and are planning the implementation of a mental health team program at the Sturgeon Hospital.[32]

Other detachment personnel included a medical officer, who worked at the Garrison clinic overseeing ambulatory care, responding to air crashes within No 408 Squadron, covering parachute jumps, and handling any other emergencies. Seven nursing officers were also part of the programme, and "Excellent feedback has been received from unit managers." Reports praised the work of service personnel in the operating room, including two technicians, who

> have started and completed the requirements to obtain a Licensed Practical Nurse qualification in June 97. After completing the program, they have worked in the same institution as the OR nurses circulating, scrubbing, and helping in different specialties. Maintenance of competence has been met. Very good feedback has been received from unit managers and staff. Two other OR Techs have started their LPN [licenced practical nurse] course and should graduate in May 98.

Six nursing officers worked in intensive care, one worked at the Royal Alexandra Hospital in mental health, three were on general duties at Sturgeon Hospital, and "Unit managers and staff have much praise for military staff." Three other nurses working in community health.[33]

The Canadian Forces Medical Service, therefore, in spite of cutbacks and budget reductions, maintained as wide a variety of trades and classifications as ever. In addition to the personnel discussed above, Detachment Edmonton had a pharmacist, who, it was reported, "was posted at the end of Sep 97. He has planned a program for Maintenance of

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32 DHH 1326 3572, CF Med Gp HQ Det Edmonton Annual Historical Report, 18 Mar 98.

33 DHH 1326 3572, CF Med Gp HQ Det Edmonton Annual Historical Report, 18 Mar 98.

Competence for all area pharmacists. Furthermore, he is employed as a pharmacist consultant at RAH'ICU," or the Royal Alexandra Hospital Intensive Care Unit. "Another pharmacist is covering the G[ar]r[iso]n clinic pharmacy. She will start the Basic Administration Officer Course in Jan 98." Furthermore, it was noted that six medical assistants, privates and corporals, "have started and completed the requirements to obtain a Licensed Practical Nurse (LPN) qualification (June 97). Since then, they have been employed at Sturgeon Hospital rotating through Medicine, Pediatric, Surgery, Obstetric and Emergency unit. Also, they have worked at the Grn Clinic as Medical Assistant." Six others subsequently began the same programme, while rounding out the team were one each of laboratory, X-ray, preventive medicine, and specialist technicians.[34]

Having only one each of certain trades limited the training medical assistants could receive, as they could not be detached from the garrison clinic to get experience in any of the civilian hospitals, but in other regards the programme seemed to have fulfilled its purpose. "The last 8 months of the trial, integrating military health care providers in three different sites has been a success for Nursing Officers and Med As qualified as LPN... All unit managers highly regard and praise the military staff. The skills of our staff are similar to their civilian counterparts. To date there has not been any complaints [sic] received from Union locals," probably leery of what inexpensive armed forces personnel would do to wage rates. Still, it was noted, "Nursing Officers were very satisfied with the experience gained in civilian institutions," although medical aides (the successors to medical assistants) with licensed practical nurse qualifications found the nature of their tasks overly limited by provincial legislation.[35]

If for some CFMS members practical training required work in hospitals, for others it meant leaving the comforts of home—such as they were on an armed forces base—to practise their trade in the field. Given the continuing emphasis on maintaining sovereignty in Canada's northern latitudes, some of this work was conducted in winter, which posed its own particular challenges. A good example was Exercise Response Spéciale, in late 1981. Involving the Special Service Force, medical support was the responsibility of 2 Field Ambulance, based like the rest of the brigade in Petawawa. As if to mimic what would happen in wartime, manoeuvres got off to a difficult start when the initial site for the BMS (Brigade Medical Station) was found to be inhabited by cattle—

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[34] DHH 1326-3572, CF Med Gp HQ Det Edmonton Annual Historical Report, 18 Mar 98.

[35] DHH 1326-3572, CF Med Gp HQ Det Edmonton Annual Historical Report, 18 Mar 98.

an alternate was quickly found. Snow was cleared with help from logistics personnel, 2 Military Police Platoon, and 2 Combat Engineer Regiment. The field ambulance was tasked to treat No Duff, that is to say real rather than simulated casualties, throughout the exercise. It was also to provide an evacuation platoon for a parachute drop, which would then handle simulated casualties. In addition, "we had Med As attached to 2 Svc Bn, 427 Sqn, SSF Sigs, 2 RCHA and 2 CER," the latter string of militarese referring to 2 Service Battalion, 427 Squadron, Special Service Force Signals, 2 Royal Canadian Horse Artillery, and 2 Combat Engineer Regiment. Aeromedical evacuation facilities were available but not used.[36]

An important lesson was learned during the exercise: "Basic winter indoctrination training is a must for all exercise participants. A few cold injuries occurred where troops had little or no previous cold weather training." In fact, under the heading, "Medical," Lieutenant-Colonel C.A. Lambert, the unit's commanding officer, noted that "The predominant medical problem on this exercise was frostbite. These could have been reduced considerably by education of personnel on the prevention of frostbite and supervision by section heads to ensure precautions were taken to prevent it. (Use the buddy system.)" Still, rather than simply pontificate, the CO chose to investigate as well, and he

> interviewed systematically all cases of suspected and/or actual frostbite who were evacuated to Petawawa during the period 17-20 Jan 82 in an attempt to identify a common causative factor. To no avail. Individual susceptibility appears to be the only factor applicable across the board as opposed to other causative factors which were actively looked for (degree of training, degree of experience, physical fitness, errors in leadership, equipment failure/malfunction, compliance to well-proven procedures, exhaustion, stupidity (one case) and others)... Should individual susceptibility turn out to be, as is likely, the dominant causative factor of frostbite (after 10 or 20 years of study if need be!), the "weakest link" approach will be the most efficient prevention measure. In other words, a group is only as capable as its weakest member. Choices will have to be made, either all make it to five miles or half make it to 10 miles![37]

Other lessons were perhaps easier for the system as a whole to absorb, such as "the need for heated medical panniers to store freezables," but the exercise's main lessons, aside from the clinical issue of frostbite, were operational. A small group under a Sergeant Medical Assistant deployed on 15 January to the Earlton area, where it operated until the 22nd. It was set up under heated canvas and handled 55 casualties: "Twenty-one of these cas were returned to duty after a short to longer stay at the FMS," or Forward Medical Station; "Thirty-four patients were evacuated to Petawawa; 16 of the cas evacuated had a tentative diagnosis of frostbite injury of different degrees." To conduct evacuation, the Forward Medical Station had three ambulances, and

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[36] NA, RG 24, v 22,865, 3350 RS Pt 82.01, LCol C.A. Lambert, CO, Post Ex Report, nd.

[37] NA, RG 24, v 22,865, 3350 RS Pt 82.01, LCol C.A. Lambert, CO, Post Ex Report, nd.

> The following contingency plan was implemented and worked very well despite the distances involved, the considerable number of cas requiring evacuation and vehicle breakdowns. FMS would notify 2 Fd Amb in Petawawa when an ambulance was dispatched from Earlton. An ambulance crew (vehicle, driver and Med A) was activated in Petawawa and immediately despatched to Earlton (FMS). Considering that the journey Earlton-Petawawa took in the vicinity of six hrs, one way, the system described above insured the continued availability of ambulances at the FMS while permitting adequate crew rest and enhancing safe driving conditions as a result.[38]

Other lessons concerning the Forward Medical Station were the usual mix of things that worked and others that did not. Among the former was the Rear Administration Group at Earlton Airport which, to give just one instance, managed to procure fuel for Herman Nelson heaters on little notice, simultaneously taking measures to provide a heated building in case the devices broke down. In the "needs more work" column was the heading "Routing of Patients," where

> a small number of cas who turned out to be neither "serious" nor clear-cut "emergency" cases, were taken directly to the Englehard Hospital by non-medical personnel, without being seen by Service medical personnel. Such practice is very expensive and unacceptable for a number of reasons. A decent effort should be made at all levels of authority, including section and crew heads, to channel other than obvious emergency cases through Service medical facilities even if such facility turns out to be possibly as spartan as one single Med A with very limited resources.[39]

It was, after all, part of their training.

Next in the chain of evacuation was the Brigade Medical Station, which was set up by 22 January and also operated under heated canvas. Until the 25th it handled 29 casualties, only one of them requiring further evacuation. Still, a change of procedure was deemed in order:

> Up to 21 Jan 82, the holding and evacuation policy of the FMS, as directed by CO 2 Fd Amb, was to evacuate out of the field and preferably to Base Hosp Petawawa all patients who could not be returned to their units in a combat-fit condition. Non-combat-fit soldiers were deemed to be more of a handicap than anything else under the extremely severe training conditions.

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[38] NA, RG 24, v 22,865, 3350-RS Pt 82.01, LCol C.A. Lambert, CO, Post Ex Report, nd.

[39] NA, RG 24, v 22,865, 3350-RS Pt 82.01, LCol C.A. Lambert, CO, Post Ex Report, nd.

Then, orders changed: "On the evening of 21 Jan, CO 2 Fd Amb was asked to seriously consider keeping in the exercise area those patients who, although not combat-fit, could support without detriment to their health a continued stay in the field albeit on a light or excused duty status." As a result, policy altered: "whoever could stay in a heated Arctic tent doing nothing or next to nothing (excused duty or light duty) without detrimental effects to his health, could be returned to unit rather than evacuated out of the exercise area." Some units accepted the policy without complaint, but others "were not pleased at all..." being reluctant to "baby-sit." However, the results were deemed acceptable: "In summary, the holding/evacuation policy from 22 Jan was problem-free regarding cas requiring evacuation from the field and regarding cas requiring medical attention that could be adequately provided at the BMS. On a longer exercise, a significant problem could have developed regarding those cas NOT requiring medical attention, NOT combat fit and NOT welcome at their unit under an excused or light duty status tantamount to "stay-in-your-tent-and-do-nothing." A Convalescent Centre sometimes referred to as a "Day Care Centre" is perhaps required."[40]

A few years later 1 Field Ambulance was engaged in a similar exercise called Rapier Thrust, in which platoon, company, and unit training was conducted to refresh memories of the principles of field medical support before carrying out an exercise called "Bring "Em Back Alive." The latter practised evacuating patients in a high intensity setting, and was followed by Exercise Frosty Warrior. It turned out to be rather disappointing for the Field Ambulance, as only thirteen simulated casualties were evacuated, while some real casualties were taken directly to rear facilities, bypassing the chain of evacuation entirely; the latter approach drained the units' limited evacuation resources, namely vehicles and drivers. According to a post-exercise report, such patients should either have been removed "to the closest second line med sub-unit," which is to say 1 Field Ambulance, or those in charge should have requested "second line assistance." There may have been something deeper at work here, however, 1 Field Ambulance reporting that certain units, such as 1 Service Battalion and 1 Combat Engineer Regiment, had completely inadequate first-line medical elements, that is to say trained members of the CFMS operating as integral parts of the units concerned. As the regimental medical section commander related a few decades later, he was, in fact, the only member of the section, with the rank of Master Corporal. Providing support to 350 plus sappers

[40] NA, RG 24, v 22,865, 3350-RS Pt 82.01, LCol C A Lambert, CO, Post Ex Report, nd.

Winter Warfare, 1976. Canadian Forces Joint Imagery Centre, IE 76-7- 22

was therefore no little challenge, as he "didn't have an ambulance driver and found it somewhat difficult to operate a 5/4 [ton] vehicle/care for a casualty concurrently!"[41] One result of such a general state of affairs was that second line resources, those of the Field Ambulance itself, were under severe strain.[42]

Some lessons obviously had to be relearned each time a formation prepared to operate in winter conditions: "An in depth analysis of med stats reveals that not all Commanders understand the seriousness and possible consequences of even primary frostbite. While our soldiers are well trained and can carry out most tasks without injuries, their susceptibility to weather-related injuries increases directly with their state of fatigue, dehydration and nourishment. Supervisors at all levels must be reminded continuously to pay special attention to the safety of their troops." Other difficulties were more routine, such as the Herman Nelson heaters, which "were once again in the forefront of problems," mainly because of their age, and "The complete lack of cross-country capabilities" to evacuate casualties. The introduction of the Grizzly, a six-wheeled armoured personnel carrier with (nearly) all-terrain capability would, it was hoped, solve evacuation problems. In all, the Field Ambulance had seen 411 patients, of whom 28 were admitted to the Brigade Medical Station and 3 evacuated from the area.[43]

Winter warfare exercises lost none of their importance in the years that followed. In early 1989, 2 Field Ambulance conducted Starlight Mukluk, which "reaffirmed valuable knowledge and skills required for survival in extreme cold weather conditions." Some of the issues addressed were "personal clothing and equipment," "bivouac and tent routine," "snowshoeing and skiing," "navigation and march discipline," "rabbit snares," "nutrition and food preparation," "importance of keeping morale up," "importance of being physically fit," and "treating the sick and injured under extreme cold weather conditions": the usual mix of survival, tactical, and medical topics.[44] The exercise was conducted again the following year, serving as a refresher leading up to Svelte Nordic,

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[41] CWO M. McBride to Bill Rawling, 18 Feb 03.

[42] DHH, Annual Historical Reports, 2103, Post Exercise Report – Rapier Thrust 84, 20 Feb 84.

[43] DHH, Annual Historical Reports, 2103, Post Exercise Report – Rapier Thrust 84, 20 Feb 84.

> "a Canadian Sovereignty Exercise" from 10 to 24 March 1990. It was certainly arduous, as "2 Field Ambulance deployed five kilometres on foot from Resolute to a place with the ironic name of Crystal City (simply a valley between two ridges) and conducted most of the survival training from this location."[45]

There were, of course, exercises in other seasons, and threats to life and limb other than frostbite and respiratory disorders. In the fall of 1984, for example, medical practitioners in Petawawa conducted Trial Chace II, incorporating elements of a unit medical station, a field ambulance, and 1 Canadian Light Field Hospital. Though most personnel were from the Special Service Force headquartered in that base, there were also augmentees from 1 Field Ambulance and 5e Ambulance de Campagne

> Training of the trial Fd Amb commenced 13 days prior to the beginning of the actual trial. During this period, the unit deployed, individual and unit training was conducted and instruction in the use of specialized items of equipment took place. This training occurred without the assistance of external agencies and was further hampered by the late arrival of certain items of specialized equipment.

Still, its participants soldiered on, the purpose of the exercise being to test procedures for treating casualties in a chemical warfare environment. For the first two days a single chemical simulant was used to activate a chemical agent monitor, or CAM, so as to provide as much realism as possible without the use of hazardous agents. The three days that followed were made up of continuous operations in which about 400 exercise casualties were treated.[46]

Rather than use a barrier method, where all personnel wore masks and suits to protect themselves against chemical agents, a citadel was created by sealing off tentage. The result was a three-phase treatment regimen, the first being performed outside where liquid chemicals might be present, the second conducted in a liquid-free environment where gaseous chemicals might pose a hazard, and the third a toxic-free area inside a "collective protector." The post-exercise "preliminary" report was several inches thick, itself an indication of the lessons learned during the manoeuvres, ranging from the fact that "Personnel slept with contaminated blankets" to the need for more effective lighting in the operating room. Perhaps the most important dealt with issues of workload and fatigue, where "Priority 3 and 4 patients were increasingly ignored as Med As got tired." Also, it was observed, "Litter Bearers (LBs) must be provided to Unit Medical Station (UMS) elements," the UMS being the successor to the regimental aid post,

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[44] DHH, Annual Historical Reports, 2104, For Year 1989
[45] DHH, Annual Historical Reports, 2104, For Year 1990
[46] NA, RG 24, Acc 97-98/350, Box 4, 3472-14, Trial Chace II Preliminary Report, 21 Jan 85, 5

> with a view towards maximizing the physical and cognitive endurance of the Unit Medical Officer and the Medical Assistants. In addition to their normal duties the UMS LBs could be responsible for contamination detection, monitoring and control, and maintaining the chemical protective measures of the station itself and its associated equipment.[47]

Medical practitioners could only be effective if they had help from others.

Field exercises came in a wide variety of types and durations, so that in 1991 2 Field Ambulance participated in seven major manoeuvres in all, including the (by then) perennial Starlight Mukluk. Another operation, "Exercise Proud Flag 91 was [a] two phase exercise designed to practice the Special Service Force Brigade in Defence of Canada. The first phase (11-15 Feb) was a tutorial exercise conducted as a prelude to phase two Command Post Exercise TEWT (29 Apr-2 May 91)," or Tactical Exercise Without Troops. The whole was preparatory to Thunderbolt 91, itself "the field training exercise for Defence of Canada Operations" which "saw 2 Field Ambulance deploy to the CFB Petawawa training area in support of the 1 RCR Battle Group and the RCD Battle Group. Unlike Exercise Proud Flag, the entire 2 Field Ambulance establishment, less the base hospital staff, was deployed from 10-31 May in the training area in austere conditions." Then came the Central Area Concentration from 8 to 29 August, where both regular force and reserve elements trained in Petawawa, followed by a fall concentration. The latter focussed on individual skills, such as nuclear, biological, and chemical defence, vehicle driving, first aid, weapons handling, and field craft. Next was Running Deer, a map-board exercise designed to allow junior officers to practise combat team tactics, followed by Basic Field,[48] "the support that 2 Field Ambulance provides to the Canadian Forces Medical Services School (CFMSS)." The task was described as

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[47] NA, RG 24, Acc 97-98/350, Box 4, 3472-14, Trial Chace II Preliminary Report, 21 Jan 85, E2, K4.

[48] DHH, Annual Historical Reports, 2104, For Year 1991.

> A basic field course for medical services officers was conducted by CFMSS 23 October-20 November. 2 Field Ambulance was tasked to provide Evacuation Platoon vehicles, equipment and drivers along with ambulances, for the Field Training Exercise (FTX) which takes place during the last week of the course. The objective was for 2 Field Ambulance to provide all the necessary equipment, including a skeleton support staff, and allow the officers on the Basic Field Course to use these resources for exercise training in the areas of: evacuation deployment, set-up and tear-down; movement of casualties; etc.[49]

Other, more specialized exercises included Starlight Flight, "an aeromedical familiarization exercise" in which "2 Field Ambulance personnel were instructed in the medical aspects of air evacuation during CC-130 [Hercules cargo aircraft] flights between Trenton and Edmonton," and another exercise which "practised unit personnel in their role of providing medical support for a major aircraft crash in Canada's north."[50] Among the most challenging manoeuvres in this period were those involving reserve units, since as part-time organizations they often found it difficult to organize exercises on any large scale; and On Guard, billed as a

> Total Force' rehearsal, that is to say with a mix of regular and reserve units, was no exception. It involved 23 Medical Company from Hamilton, 25 Medical Company from Toronto, the Ottawa Militia District Medical Platoon, and 2 Field Ambulance as they deployed to the Petawawa training area. "The main objectives were to practice field craft skills, and to learn proper evacuation drills and treatment set ups within a Total Force structure.[51]

Lieutenant-Colonel R.C. Hesler, the commanding officer of 23 Medical Company, later provided a report that is one of the best descriptions of the trials, tribulations, and occasional victories reserve units faced in trying to conduct training. An initial meeting in December 1989 had no real agenda, though it may have been worthwhile to establish "The willingness to co-operate by 2 Field Ambulance staff..." Later, however, Hesler noted,

> I had great difficulty in receiving responses from the medical chain of responsibility, despite repeated requests, concerning ... my scope ... my authority; and ... my responsibilities... In the end, I took the "bull by the chain" and started the ball rolling leaving the responsibility of finding MOs to the Area Surgeon's office while I handled the planning, organization and negotiations concerning the exercise training.[52]

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[49] DHH, Annual Historical Reports, 2104, For Year 1990.

[50] DHH, Annual Historical Reports, 2104, For Year 1993.

[51] DHH, Annual Historical Reports, 2104, For Year 1990.

[52] NA, RG 24, v 22,863, 3350 OG, Pt 90.01, LCol R.C. Hesler, CO 23 Med Coy, to OMD HQ, 15 Aug 90.

There was, Hesler observed, confusion at Central Militia Area Headquarters (or CMA), in effect responsible for most of Ontario, "in regards to who was going to be where, and me in particular. It took considerable energy to determine what the facts were concerning my tasking." Also, he noted, "There were problems identifying the No Duff evacuation chain and initial indications of shortages of NBCD equipment. This was to resolve itself later." He singled out part of the process for specific criticism, noting, "I found the meeting at Ottawa in February 1990, to put it mildly, disappointing. It appeared to me that the Medical Services were an after thought, as very little emphasis of interest was put on it. In short, it was a waste of my time," and that of his Regimental Sergeant Major, "as well as tax payers dollars. As a former combat arms officer and commanding officer, it was an eye opener concerning the peerage of the CFMS ... which was not in the venue of being a "peer" at all." He also found that "Response to requests to both 25 (Toronto) Medical Company and the Ottawa Militia District Medical Platoon was slow. In the case of the Officer Commanding the Ottawa Militia District Medical Platoon, he ignored direction concerning reports and returns," and chose to provide requested information only when instructed to do so by the Area Surgeon: "This wasted time and effort and caused me some concern about the motives."[53]

There was an "on the other hand" aspect to the report, however, as "In contrast the liaison and communications throughout with 2 Field Ambulance was excellent. In particular, relations between the DCO [Deputy Commanding Officer], Major J. McKie and the Ops O [Operations Officer], Lieutenant (N) Holden were very positive." For example, he noted

> Some problems were encountered within my own District when, without consultation, our gas mask request was not actioned because an individual decided we didn't need them. 2 Field Ambulance came to the rescue as they did in some other areas, by providing the NBCD equipment on our arrival.

Also on the positive side, "Units were advised in April as to what training to concentrate on; what items to bring and what to order in preparation for the exercise." Still, there were the frustrations that usually developed in attempting to indoctrinate reservists: "23 (Hamilton) Medical Company and 25 (Toronto) Medical Company trained together on two weekends in May 1990. This gave me a perspective on the training level. As usual those who showed up on one weekend didn't on the next, in many cases, thus limiting the ability of the second training weekend (Exercise Springfire I & II) to build upon one another. This later became a factor during the actual exercise period of 30 June – 15 July 1990."[54] Some highlights of the exercise, according to Colonel Hesler, included "the professionalism of all concerned regarding the integration and operation of the composite unit," "the co-operation of the key staff of 2 Field Ambulance," and "the helicopter training including an air head evacuation exercise." He added, "It is interesting to note that many of 2 Field Ambulance personnel had not done this and some other training we did," "that in some areas we had skills equal to and exceeding that of our regular force counter parts," and that "NBCD training ... was very well done," and "was extensive for the time we had." There had thus been some value in what had generally been a frustrating experience.

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[53] NA, RG 24, v 22,863, 3350 OG, Pt 90 01, LCol R.C. Hesler, CO 23 Med Coy, to OMD HQ, 15 Aug 90.

Beginning in 1981, the largest such exercises involving medical units in Canada were initiated under the name "Rendez-Vous," and were operated at brigade or even divisional level. They were conducted every two years or so, and the second was thus RV 83, where some of the problems encountered would have been familiar to practitioners who had been on such manoeuvres as Starlight Mukluk. For example, standing operating procedures dictated that personnel fit only for limited duties would be returned to their units for employment or sent back to their home bases. However, these procedures were not followed: "At the start of the exercise units with pers[onnel] on restricted duty, many of whom had come to RV83 on restricted duty, were still with units. At the time [the] manoeuvre started units tried to pawn their unfit pers into the med system... Units must retain responsibility for their unfit pers or a Div[isional] transient/holding org should be formed to administer these pers."[55]

Also, although patient care was generally of a high standard, for those on sick parade as well as for those admitted to hospital this was in spite of the state of equipment:

> The heating of the hospital deserves special mention since the Herman Nelson heaters are not only inadequate but pose a definite hazard. There [sic] were not designed for the role in which we use them for the prolonged hours of running. They require constant maint[enance] and, at times, pumped positively harmful fumes into the hospital. They are noisy and certainly make auscultation of patients difficult. They should be withdrawn from use and replaced.

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54. NA, RG 24, v.22,863, 3350-OG, Pt 90-01, LCol R.C. Hesler, CO 23 Med Coy, to OMD HQ, 15 Aug 90.
55. DHH, Annual Historical Reports, 2103, RV 83 Div Med Coy Post Exercise Report, 13 Jul 84 [possibly 83].

Similarly, in regards to medication, "Units Did Not bring 30 days of supply of medical material. Their requests placed a strain on the med supply system. Early adequate planning by Unit Med and Administrative staffs is necessary to correct this problem. All units must ensure that they deploy with thirty days supply of med material."[56]

Movement was also a problem, although one that perhaps added a sense of realism to the exercise. Conditions were sufficiently severe to delay preventive medicine inspections and even ambulances sometimes had to keep to slower routes due to the closure of main axes. However, "408 Sqn provided an extremely efficient air ambulance service." Unfortunately, due to topography, the helicopter and the Divisional Medical Company could not be co-located. "This would be the ideal situation," the post-exercise report noted, with the air ambulance crew and medical personnel being scrambled from the same site: "With the co-location of these resources, coord[ination] problems, which were the result of sometimes intermittent comm[unication]s, would be minimized..." Still, it was observed, "The Casevac requests were, in general, effective. On occasion the helicopter was used when road ambulance would have sufficed but this is always a question of judgment of the man initially handling the injured man. Nonetheless, the helicopter always responded rapidly to requests, as it should."[57]

Each Rendez-Vous was not just a litany of lessons relearned, however, and in some areas the exercises did indeed allow the development of sophisticated skills. RV 85, for example, provided an excellent example of the chain of evacuation as it was conceived in the last quarter of the twentieth century. The exercise was conducted in Wainright, Alberta, where first- and second-line support was provided by the units' own medical establishments and the field ambulances, respectively. For third-line support one could turn to an RV medical company formed for the exercise, or to a field hospital (of which much more later). The fourth line of support was at the National Defence Medical Centre in Ottawa and major civilian medical facilities in Edmonton and Calgary.[58]

There were, nevertheless, still "lessons learned," one of them how difficult it could be to obtain reservists given that they were often unable to get away from their civilian jobs: "Until significant developments (at the legislative level) occur to improve reserve force availability vis-a-vis employment in the civilian sector, the obvious incompatibility of part-time soldier/civilian employees will continue to limit their development and involvement of the medical militia." The regular force, however, could also stand improving, and it was observed that "Positive steps towards a universally competent medical branch officer are critically required in our training. Increased emphasis on areas such as staff procedures, field operations and employment in command posts or headquarters is required." More medical officers needed to learn the organizational aspects of military health care, as, it was observed, "Presently a great shortage of staff trained officers exists in the CFMS. It is suggested that our officers, particularly medical officers, be encouraged to attend CLFCSC," the Canadian Land Forces Command and Staff College. There, they could learn how the army, navy, and air force operated at different levels and in various circumstances, but at the time "There are only two medical officers, both LCols, graduated from this excellent course designed for Capts and Majs of the land force." It was also recommended that "Pressure must be exerted upon arms and combat service support commanders at all levels to become more self-sufficient in regard to medical support in the field by maintaining an adequate unit medical establishment on a year round basis," since infantry and other units, as we have seen, were supposed to rely to some extent on their own integral medical support. Cross-service attendance was also advised: "Participation of medical branch officers from other commands," such as Air Command and Maritime Command, "in FMC training and operations should be encouraged to minimize their need for indoctrination when assigned to land force elements in the future."[59] FMC, the reader will remember, or Force Mobile Command, was the successor to the Army in Canada.

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[56] Ibid.

[57] Ibid.

[58] NA, RG 24, v.22,866, 3350-RV85, Pt 84.01, Col R-M. Bélanger, for Comd Surg, to Distribution, 19 Mar 86.

An interesting lesson from the next such series of manoeuvres, RV 87, was that training, ironically, could interfere with large-scale exercises. One unit, 2 Field Ambulance, reported that Starlight Serenade, part of the overall syllabus,

> revealed a lack of depth in field craft and experience within the unit. This inexperience was primarily due to 2 Fd Amb's participation on Ex Bravelion (Aug-Oct 86) which deprived the unit of its Fallcon [fall concentration] during which individual field training is conducted. This lack of experience carried over to tactical driving skills. Many drivers exhibited a tendency to close up to the vehicle in front whenever the packet stopped,

so that one enemy shell could destroy several trucks. It was also noted that "drivers were unsure of themselves during blackout driving pointing out the requirement for night tactical driving exercises." Another set of manoeuvres, Starlight Anchor, went better, evacuation and treat-

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59. NA, RG 24, v.22,866, 3350-RV85, Pt 84.01, Col R-M. Belanger, for Comd Surg, to Distribution, 19 Mar 86.

ment platoons practising their trade as airmobile detachments. Generally, however, the unit felt disappointed, RV 87 not having incorporated a brigade field exercise:

> The lack of a Brigade FTX was keenly felt by 2 Fd Amb. A field ambulance is designed to operate over a Brigade's worth of territory with a Brigade's worth of casualties. The Brigade controlled battle group exercise utilized but a single Evacuation Platoon at a time and produced no casualties for 2 Fd Amb training." Still, the report acknowledged, "RV 87 was found to be a successful and interesting exercise. Many lessons were learned, particularly in regards to airmobile operations and the basic field crafts.[60]

It was not just field ambulance units that practised their trade on exercise; so did other facilities such as Canadian Forces Hospital Europe in Lahr. Being on the front line of the Cold War, it, along with the formation it supported, conducted what were called Starfighter exercises, which were designed to simulate the opening stages of the Third World War. They were frequent, eight of them being scheduled in one six-month period from November 1985 to May 1986, and they were intense. Just one of these exercises "proved to be a long and busy period. Simulated casualties were double those of previous exercises (approx 60 in 36 hours) and ... personnel were kept on their toes for the duration. The majority worked throughout the period without benefit of sleep."[61] The number and nature of such practices seems to have had substantial benefit, Captain L.E. Sly, commanding the Casualty Collection Post (or CCP) in 1987, noting that "Progressive improvement has been made at the CCP during the past twelve months. The medical assistants feel more comfortable in their NBCW role and conventional casualty response role..."[62] (NBCW was the abbreviation for Nuclear, Biological, and Chemical Warfare.)

Sly and the unit's personnel, however, needed to know more about recently developed procedures, while, he noted, "There exists a most definite lack of experience and exposure of all personnel in the CCP to the operation of the CF18, the aircraft itself and most importantly the pilots [sic] life support systems," such as oxygen. "I suggest that command address this problem to ensure all CCP personnel have the knowledge necessary to respond to an incompacitated [sic] pilot."[63] Starfighter continuing to be an integral part of base life, one practice in January 1988 elicited the comment that "This Starfighter exercise was considerably more rewarding than previous ones as there was a lot more activity."[64] Two months later, "A mass casualty disaster was simulated during the recent Starfighter exercise. It was a very useful exercise for the medical personnel from the Casualty Collection Post," members of 1 Royal Canadian Horse Artillery playing the part of casualties.[65]

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[60] NA, RG 24, v.22,867, 3350-RV87, Pt 87.02, 2 Fd Amb Post-Ex Report RV 87, Jul 87.

[61] NA, 1998-0136-1, 3350-3, Sgt J.C. Friend, NCO i/c Starlight CFHE, to AO, 22 Feb 85.

[62] NA, 1998-0136-1, 3350-3, Capt L.E. Sly, OC i/c CCP, to Distribution, 19 Jan 87.

[63] NA, 1998-0136-1, 3350-3, Capt L.E. Sly, OC i/c CCP, to Distribution, 19 Jan 87.

A somewhat different exercise was conducted in April. As Captain J. Cunningham, commanding the CCP at that time, explained, "During the National Tactical Evaluation 1988 the Casualty Collection Post was staffed by two Medical Officers and 14 Medical Assistants. Three of these had never participated in a Starfighter prior to this exercise." Lasting from 11-14 April, it involved about 60 simulated patients, 20 of them all at once:

> With the lack of outside activity, the stresses of bunker activity were well appreciated. Apparently minor events such as blown fuses, plugged portable toilets, inadequate heater system, and flapping ventilation valves became major frustrations. Bunker life itself is stressful and may not provide useful rest and relaxation. It is essential that personnel spend some time outside of the bunker each 24 hour period. Furthermore, a physical training program should be designed by the Physical Education and Recreation staff for use within the bunkers.

Cunningham also noted that "Kitchen facilities are essential within the bunker for 24/7 manning. The Casualty Collection Post is adequately equipped; however, the power supply is inadequate to run more than two appliances at once. Running water and flush toilets are badly needed."[66]

In regards to equipment, he reported,

> Currently, the CCP has radio, telephone and public announcement communications. Despite the CCP's tasking to provide No Duff response for crashes, it still has no crash bell alarm system. Furthermore, if Tactical Evaluation insists on eliminating telephones as a means of communications [as part of the test], they further threaten the response capabilities of the CCP,

during the test. Therefore, though "First aid by base personnel was good," generally, "the medical support that the CCP can provide to the base is limited, and must be improved if the base is to survive any conflict,"[67] a lesson perhaps as old as Canada's deployment within NATO. Another lesson was even harsher, as, according to Captain Cunningham, "There is a lack of leadership at the senior NCO level. It should not be necessary for a physician to have to tell the senior NCOs,

[64] NA, 1998-0136-1, 3350-3, Capt J. Cunningham, OIC CCP, to Distribution, 6 Jan 88.

[65] NA, 1998-0136-1, 3350-3, Capt J. Cruchley, Base Flight Surgeon, to Distribution, 21 Mar 88.

[66] NA, 1998-0136-1, 3350-3, Capt J. Cunningham, OIC CCP, to HQ CFB Lahr, 19 Apr 88.

[67] NA, 1998-0136-1, 3350-3, Capt J. Cunningham, OIC CCP, to HQ CFB Lahr, 19 Apr 88.

who have spent time in infantry battalions" as part of those units' integral medical support, "how and when to set up security and local defense plans, nor should it be necessary for the officers to become involved in the day to day running of the CCP. Unfortunately this is the present situation."[68]

That "situation" was not eased by the need to prepare for disasters short of war, a requirement for any hospital whether civilian or military. Therefore, in November 1988 "The CFB Lahr Emergency Response Plan (ERP) was exercised," the scenario being a large passenger bus that crashed and caught fire in a local Rod and Gun parking lot:

> The bus contained over 50 passengers with priority one, two and three injured... Initial response by emergency vehicles was excellent, as expected, since all players had been forewarned by the Op Order. In my opinion a no-notice exercise, especially one after normal working hours, would appreciably increase the response time.

One observation of interest was that 129 Anti-Aircraft Detachment's commander, second-in-command, and Battery Master Warrant Officer

> responded quickly with seven vehicles and some much needed manpower. This manpower, eventually a total of 58 personnel, was used to complete the security cordon, acted as stretcher bearers both on the scene and at the hospital. Within minutes of their arrival they set up a heated modular tent... In a real disaster 129 AAD support, I think, would certainly make a life or death difference for many casualties.

The exercise was therefore of some use, and Lieutenant-Colonel R.L. Stickley, the Base Operations Officer, recommended two such practices be conducted every year.[69]

If Canadian Forces Hospital Europe was on the front line, it was not alone, nor were such units limited to geographical areas in proximity to the Soviet Union. On 1 July 1970, 1 Field Ambulance was formed at Canadian Forces' Base Gagetown, one of its primary roles being to support a brigade (called the CAST, or Canadian Air-Sea Transportable, Combat Group) which, though based in Canada, would be deployed to Norway in case of hostilities. However, the Field Ambulance reported to formation headquarters in April,

> Before this unit can evaluate the resources required to support the CAST Combat Group in Northern Norway, we must have a medical plan on which to base our decisions. This plan must, of course, complement the tactical plan of the Combat Group and be based on such information as the size and type of units supported, casualties expected, location of

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68. NA, 1998-0136-1, 3350-3, Capt J. Cunningham, OIC CCP, to CO, 28 Apr 88.
69. NA, 1998-0136-1, 3350-1, LCol R.L. Stickley, Base Ops O, to Distribution, 25 Nov 88.

> supported units, location and extent of supporting medical facilities … and availability and priority of helicopters for medical evacuation, etc.[70]

A year later 1 Field Ambulance had a much better idea of what it would need, and reported that in addition to 3/4-ton vehicles, "with which the Field Ambulance is now equipped, there is a very real requirement for heated, tracked ambulances or other all-terrain type ambulances for the winter and spring periods when roads may be unaccessible to wheeled vehicles. The use of toboggans towed by oversnow vehicles or by manpower is acceptable at the UMS [Unit Medical Station, previously the Regimental Aid Post] level or forward but not to the rear of UMS." It would also require Herman Nelson heaters, which in the early 1970s had not sufficiently aged to have become a logistical problem. As for third-line support, the ambulance expected to have available in its rear two field hospitals under divisional control, one at Narvik and the other at Salangen. Also, patients would have access to two convalescent centres, a mobile army surgical hospital at Trondheim, and a convoy of 30 Volvo ambulances for evacuation, as well as various ships and ferries.[71]

The unit was not, however, oblivious to the nature of the challenge it faced, with casualties expected to be 14 per cent a month in heavy periods, 6 to 8 per cent if fighting was "moderate", and 3.5 per cent if activity was light. Such statistics, it should be noted, could alter dramatically given such factors as enemy air superiority, the lack of anti-aircraft guns among friendly units, a shortage of armoured fighting vehicles, and the fact that the Soviet Union had a massive nuclear and chemical ability that it had pledged to use in time of war. As well, observers noted, "Because it is inevitable that evacuation will be completely stopped frequently in Northern Norway, the feasibility of a forward emergency surgical capability and holding capability within 1 Field Ambulance should be studied."[72]

Another year meant more time to gather intelligence and paint a more detailed picture of what Canadians could expect:

> Bearing in mind that our defences are to be static and concentrated in areas bearing on road junctions, passes and airfields; and the fact that the enemy has 5:1 air superiority (we have no AA protection) and 15:1 tank superiority and can bring in 2 b[riga]des of 150-mile range nuclear weapons, we can expect the following: A concentrated hard-hitting land-air battering that keeps our troops with their heads down for most of the time. There is a good possibility of contaminated casualties. There is

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[70] NA, RG 24, Acc 84-85/167, Box 46, 2245-1/2, J.R. Rail to HQ 2 Combat Group, 21 Apr 71.
[71] NA, RG 24, Acc 84-85/167, Box 46, 2245-1/2, J.R. Rail to Distribution List, 28 Apr 72.
[72] NA, RG 24, Acc 84-85/167, Box 46, 2245-1/2, J.R. Rail to Distribution List, 28 Apr 72.

> excellent possibility of fragmentation injuries from shrapnel and rock fragments.

Also, it was noted, with troops

> in position for any length of time, one can expect foot problems in the damp spring, frostbite and exposure in the winter, snow-blindness, and psychiatric problems from isolation and lack of entertainment. With the distance involved and the soviet air-sea menace, reinforcements are extremely unlikely unless it is a phoney war situation,[73]

similar to 1939-40, when there was little or no fighting on the western front. Furthermore, since they could not count on reinforcements, units would "likely be demanding in their requests for a patient's return to duty and information as to his length of stay in hospital."

Other challenges faced in providing medical support were listed:

> The precarious road situation with spring flooding, winter darkness, avalanches, narrow, winding roads which increase time and distance, will all contribute to difficulties in evacuation, not to mention likelihood of vehicle accidents and mechanical breakdowns. With the forward elements occupying the high ground where roads do not exist, our box amb[ulance]s will not be able to reach a UMS which is situated well forward. It seems probable that the UMS will be placed more to the rear than is conventional in order to place it proximate to road evacuation... Helicopter service will be unreliable at best with the terrain and weather conditions. For all these reasons it seems possible that we depend more than customary on litter carrying on foot—and that requires good physical conditioning beforehand."[74]

As for hospitals further to the rear, which had figured so prominently in preliminary plans two years before, it was observed that

> Because the Norwegian civilian and military medical facilities will be strained to their utmost, our field hospital will be tasked with handling more patients and more types of treatments than they are designed to undertake. This places a responsibility on the field ambulance for a high degree of sorting skill such that only casualties who really need hospital care are evacuated back to that level. The remainder will require treatment by our MOs at the evac[uation] platoon and treatment platoon levels—all the more so when we consider how precarious our ability to move patients will be with the crowded, twisted, infrequent and heavily bombed roads in poor weather conditions... The field ambulance holding policy may be for more extended periods than we are accustomed to living with. Medical resupply may be reasonably good, as it can be air-transported and dropped if necessary. Vehicle resupply is somewhat more difficult.

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[73] NA, RG 24, Acc 84-85/167, Box 46, 2245-1/2, Unit CAST Briefing, 1 Fd Amb, nd.

[74] NA, RG 24, Acc 84-85/167, Box 46, 2245-1/2, Unit CAST Briefing, 1 Fd Amb, nd.

All in all, the unit would need as much training as possible in handling the casualties of nuclear war as well as fragmentation wounds and injuries caused by cold and damp. Troops would also need good physical conditioning while learning to drive in atrocious conditions on bad roads, the art of camouflage, winter survival, medical care in dug-in facilities, and how to care for patients for several days at a time, including bathing, feeding, and latrine facilities. Besides these basic skills, morale was also important, "We need to develop a unit spirit—an esprit de corps—and we must develop the ability to entertain ourselves while in the field."[75] Of all the challenges the Canadian Forces Medical Service faced in this period, Norway was perhaps the greatest of all.

It was not the only one, however, and another development of this time would have consequences reaching much further into the future: a fully-integrated mobile field hospital. There not having been a Canadian version of such a unit in Korea, by the time one was created in 1969 it had been over a quarter-century since the CFMS or its predecessors had had any operational experience with such a facility, and much had changed in the previous decades. As Captain W.E. Dauphinée of the Directorate of Medical Plans and Requirements wrote in 1970,

> The exploding technology which has provided today's Armed Forces with revolutionary weapons and advanced systems of communications has combined with the new forces doctrine of a highly mobile military force to highlight areas of obsolescence in our present field medical units... We have only to view a picture of a field hospital in operation during the Boer War to note the striking similarity that exists between the elements sheltering the field hospitals of that period and the shelter elements used by our present medical service field units,

which were still under canvas.

Obviously, Captain Dauphinée felt that more could be done, especially given that "The wounded soldier is a highly perishable commodity and his survival can be directly related to the time between his wounding and the start of definitive medical treatment." Therefore, he advised,

> "It is our goal to develop a field hospital that can be quickly transported to any spot on earth, capable of providing definitive medical and surgical care within a few miles of the front lines, moving forward as the troops move forward and being in full operation 30 minutes after arrival at a new location. This hospital must have the flexibility to be tailored to the needs of the force being supported regardless of weather or terrain; and above all, must be able to administer the miracles of modern medicine in an environment designed to insure the best probability for patient

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[75] NA, RG 24, Acc 84-85/167, Box 46, 2245 1/2, Unit CAST Briefing, 1 Fd Amb, nd.

> recovery without imposing an increased logistical burden on the commander.[76]

Such principles were not recent desires, but the kind of facility that would fulfil them was an expensive prospect, and not one that could be implemented as the country demobilized after the Second World War, or as Dauphinée noted, in Korea: "Further, when the Korean conflict came along, our efforts were diverted from the revamping of a complete system to the more immediate problem of individual item improvements that could immediately be used in caring for casualties." The problem thus found itself on the back burner, and "The stocks of field hospital equipment in Canada, of which there had been no procurement since 1945, were totally expended in Korea and in meeting civilian emergencies at home and abroad." (As we have seen, the equipment may have been used up in Korea, but for purposes other than operating a field hospital.) However, "The urgent need to improve the field medical capability of the Canadian Forces and replenish equipment stocks led to the purchase of three 100 bed sections of a US Army field hospital. It is one of the 100 bed sections which constitute the building block for 1 Canadian Field Hospital in Petawawa; the balance of the equipment being held in dead storage."[77] It was far from a favourable situation.

The US Army, however, was in the meantime developing the MUST, or Medical Unit Self-contained Transportable, which solved some of the following problems faced by previous field hospitals:

> The operating table tended to be unsteady. The single light source lacked of intensity and shadowed the surgical field. Separate free-standing instrument stands, basin stands, backtables and kick buckets stole precious space. Water for use at the scrub sink was hand-poured into the tank above the sink, and was not temperature controlled.

The first structural elements to resolve such difficulties were demonstrated in 1965, and "Just one year following the evaluation a surgical hospital equipped with the MUST system was deployed in Vietnam. The success of the system, under actual combat evaluation, was so encouraging that MUST [would] be extended to all major US Army field medical units."[78]

The "system", and such it was, was supposed to replace canvas, heating equipment, lighting sets, generators, and older medical equipment by using "an Air Inflated element. This is a shelter used where space is the prime requirement, such as patient wards." To this would be added "an Expandable Element which is a rigid shelter container used for the "Heart of the Hospital"—surgery, central sterile supply, x-ray, the laboratory, pharmacy and kitchen." Finally, there was "the self-contained Utility Element which provided electric power, shelter heating and cooling, water heating, water distribution and air distribution." Furthermore, Dauphinee continued, the system include "advanced developments in medical and general equipment. To give but one detailed sample of the new equipment that appears in the MUST system, is a new field sterilizer. It weighs 468 pounds, slightly less than the World War II sterilizer, which weighs 495 pounds, but has twice the capacity. This sterilizer has essentially the same performance of the sterilizers you find in static hospitals." As well, "The MUST will feature new operating lights and a new operating table that our professionals believe will give the surgeon equipment that is close to that found in the average static hospital."[79] Captain Dauphinee, at least, was sold on the system's merits.

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[76] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v.1, Capt W.E. Dauphinee, Directorate Medical Plans and Requirements, to Maj W.W.J. Schuler, 1 CFH, 16 Oct 70.

[77] Ibid.

[78] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v.1, Capt W.E. Dauphinee, Directorate Medical Plans and Requirements, to Maj W.W.J. Schuler, 1 CFH, 16 Oct 70.

Nor was he the only one, although in 1972 members of the field hospital, which had been formed in 1969, were still awaiting equipment delivery. Major W.W. Schuler, the commanding officer, reported how "The drop of morale within my cadre has become very noticeable. I therefore made an appreciation and came to the conclusion that both the lack of positive information concerning MUST procurement and training, posting, deployments, career courses, leave schedule etc along with changes in fixed warehousing/permanent accommodation plans produced a "what the the hell is going on" feeling." If the facility was to finish coming together by its target date of 1 January 1974, it should have begun work towards that end in 1971.[80] There was worse to come, with Exercise Open Door in September 1973; Chief Warrant Officer M.S. Oliver reported that "designed as orientation training for Cadre and Augmentee personnel" of the field hospital, it was, "in my opinion, doomed to failure from the start..."[81]

The facility relied on drawing in other members of the CFMS to bring its personnel up to strength, but "Out of 176 Augmentees only 61 were called out. Of this number only 56 showed," and one of them was granted compassionate leave after arrival. Furthermore, the cadre's commanding officer was unavailable 80 per cent of the time due to other commitments, including a golf tournament. Further down the hierarchy, neither the hospital's second-in-command nor the regimental sergeant-major were involved in preparing the exercise, and Oliver's exasperation was obvious, as

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[79] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v 1, Capt W.J. Dauphinee, Directorate Medical Plans and Requirements, to Maj W.W.J. Schuler, 1 CFH, 16 Oct 70.

[80] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v 1, Maj W.W. Schuler, CO Cadre 1 CFH, to SG, 25 Feb 72.

[81] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-2112, v 4, CWO M.S. Oliver, Ex RMS, to CO 1 CFH, 27 Sep 73.

> Having spent 23 years of service in the CFMS, in various capacities and situations, I was greatly disappointed to have been involved in such a poorly organized exercise. When one thinks of the tremendous cost involved and the training opportunities lost, due mainly to the lack of direction and leadership, it makes one wish he had not been involved... It now appears likely that 1 Cdn Fd Hosp will be tasked at least twice during 1974 (Exercise Running Jump III and Exercise Chase), and much valuable training time has been lost.[82]

Planning continued apace, however, the Surgeon General reporting in 1974 that 1 Canadian Field Hospital's strength was then made up of cadre of 24 with an augmentation list of 176. In spite of the difficulties noted above, he felt that "The unit could be deployed in support of Canadian Forces operations or in a humanitarian role anywhere in the world." It was not yet, however, endowed with the most modern facilities, as "This hospital is presently equipped as a 100 bed field hospital under canvas. It is anticipated that 1 Cdn Fd Hosp will be issued with MUST equipment by the fall of 1975. The establishment for the unit with MUST equipment will be a cadre of 30 personnel and 191 augmentees." As for preparing people for their eventual role, "Training for this unit is accomplished by bringing 1/3 of the augmentation staff to CFB Petawawa for training each year and the periodic deployment of the entire hospital in conjunction with major Canadian Forces training exercises." Also, the Surgeon General noted, "Four tradesmen (ELM [electro-mechanical] Technicians) have been trained on the operation and maintenance of the utility elements, expandable elements and inflatable shelters. Three of these personnel will be posted to the cadre and the other tradesmen will be part of the augmentation staff."[83]

The long-awaited day came in the fall of 1974, when the MUST arrived in Petawawa, becoming the focus for much training in the year and more that followed. For example, from October 1974 to March 1975, "the unit conducted snow load trials on the Medical Unit Self Contained Transportable (MUST) inflatable shelter in the Central Medical Equipment Depot Compound." Later, in June, "components

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82. Ibid.
83. NA, RG 24, v.21,832, FMC 1050-100/M1, pt 2, Defence Medical Association, Proceedings of the Annual Meeting, 7-8 November 1974, Appx 10, Report of Surgeon General.

Canadian Field Hospital on exercise, October 1974. Canadian Forces Joint Imagery Centre, PAC 74-1188

of the MUST were set up on the Mattawa Plains and the unit carried out a three day trial/exercise," while from 15 September to 7 October "the unit deployed to the Bostwick Lake area for Exercise Open Door 75. This augmentation training program employed militia men and women with the unit for the first time. The total augmented support was 161 all ranks consisting of 30 officers and 131 other ranks. In conjunction with this Exercise two inflatables of the MUST were set up." Finally, it was time for the field hospital to do some selling, and on 21 November "The Defence Medical Association was briefed on the plan to re equip the unit with MUST. This briefing was followed by a tour through the various MUST components which had been set up in the Central Medical Equipment Depot compound."[84]

It was not all smooth sailing, however, and according to Major B.N. Collens, the Cadre's commanding officer, the main problem was that its establishment "should have been approved in 1974 and specialist technicians eg ELM [electro-mechanical], EGS [electrical generating systems], were to have been posted to us in Sep 74." Establishment would then have been finalized in the four months that followed, but "neither the training nor the evaluation is possible without the availability of an ELM Tech. We have also drawn two of our own utility elements which have to be run up about every three weeks.... In order to carry out these tasks it is requested that Sgt Northrup R.M, ELM Tech," of 2 Service Battalion, "be attached for approximately four to five months. Sgt Northrup is one of the ELM Techs designated to be posted to the cadre."[85] A nominal roll for December 1975 listed two officers, two warrant officers, seven senior non-commissioned officers, a dozen junior non-commissioned officers, and one sole private,[86] a total of 24 when the full establishment for a MUST-equipped field hospital's cadre was 30.

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[84] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 19 Jan 76.

[85] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v.1, Maj B.N. Collens, CO 1 Cdn Fd Hosp Cadre, to CO 1 Serv Bn, 9 Jan 75.

Worse still, doubts as to the Medical Unit Self-Contained's utility in the field were beginning to bubble to the surface. In September 1976 an American report on the MUST came to the attention of Major G.H. Rice, 1 Canadian Field Hospital's commander. Among other things, the report's author related how during discussions with the commander of a US Combat Support Hospital in West Germany, "he noted that ... The maintenance of zippers is a definite problem of a recurring nature and there is now talk in US Army circles of integrating tents into the system in lieu of the inflatable shelters," the tents being held together with easier-to-maintain ties. Another problem was "a lack of maintenance expertise," in regards to some of the equipment, while "To prepare their operating rooms for use they require a minimum of 24 hours in order to obtain the results of the first bacteriological cultures," to ensure an aseptic facility. Logistics presented a further challenge, as, it as noted, "One of a kind items represent a difficult resupply problem particularly when back-up items are not immediately available in depot stocks; e.g. should they damage their laboratory container and its contents (this actually happened on their exercise when the dolly set supporting their laboratory fish-tailed and tore away the container during their road movement) or should the operating room floors become non-serviceable (as they are prone to do) it is essential that a replacement item be readily available in order to keep the hospital fully operational." Finally, an appendix listed seventeen "high usage/high cost spare parts that should be maintained in the hospital at all times," complete with NATO stock numbers.[87]

The MUST was certainly a challenge to keep operational, a 1977 training programme listing seventeen different trades required for the hospital's staff, including vehicle technician, electro-mechanical technician, field engineer, supply technician, mobile support equipment operator, medical assistant, operating room assistant, laboratory technician, hygiene technician, dental clinical assistant, plumber gas fitter, electrician, refrigeration and mechanical technician, electrical generating systems technician, water sanitation and petrol, oil, and lubricants technician, and, finally, X-ray technician.[88] Still, its evolution was attended with no little optimism; reporting that same year, its historical officer noted that

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[86] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 19 Jan 76, Annex A

[87] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v.1, Maj G.H. Rice, CO 1 CFH, to Distribution, 22 Sep 76.

[88] NA, RG 24, 92-93/296, Box 148, 1 CFH 4500-1, v.2, Maj Gary H. Rice, CO 1 CFH, to Maj E. Travis, US Army Med Eqt Test and Evaluation Div, 12 Apr 77.

Casualties being treated inside the MUST, 1978. Canadian Forces Joint Imagery Centre, PA 78-1878

> It is presently the only field hospital in the Regular Force Medical Services. However, unlike its predecessor of the Italian campaign the present day 1 Cdn Fd Hosp is a fully-fledged mobile surgical hospital with an ongoing mission in support of Canadian Forces operational plans. Moreover, it is organizationally unique in that it must draw its operational strength from other units of the CF prior to being committed to action; the day-to-day responsibility to maintain the unit in a state of readiness resting with a small permanent strength cadre based at CFB Petawawa. Since its inception in 1969, 1 Cdn Fd Hosp has participated in a number of training exercises including Exercise Running Jump II, Exercise Smash I and II and Exercise Mobile Warrior.[89]

It was insufficient proof of the unit's viability, however, and the difficulties attendant to ensuring the wide variety of tradespeople it needed would actually be available in an emergency seemed insurmountable. On 1 August 1983 the unit was renamed, becoming 1 Canadian Light Field Hospital, its capacity reduced from 100 beds to 60. Its role "as a mobile light field hospital is to provide third echelon (NATO Role 3) medical support to the battle formations to which the unit is assigned," and for that purpose "Only portions of the MUST (Medical Unit Self-contained Transportable) were retained, and most of the unit is housed in modular type tentage." Perhaps a better solution to the problems of battlefield surgery lay not with new materiel, but with improvements to old technology. In any case, it was decided, "The functions of 1 Canadian Light Field Hospital are to provide resuscitation and initial wound surgery, provide short-term intensive post-operative care for surgical patients, prepare patients for further evacuation and provide limited scope non-surgical care services." It would have a cadre establishment of 3 officers, a chief warrant officer, 2 master warrant officers, 7 sergeants, 4 master-corporals, 14 corporals, and 3 privates, for a total of 36.[90]

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[89] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 11 Jan 77, Annex B.

The result was noticeable: "1984 witnessed a rejuvenation of the Unit with increased emphasis on new equipment, trials and deployment concepts." New kit included the Modified Tent Expandable Module Sections, or TEMS,[91] while "1984 also saw the last of the Medical Unit Self-Transportable (MUST) Inflatable Treatment Facility. Deterioration and rot finally forced it out of service." Tentage having been substituted, "As a result of the new equipment, a more ambitious training programme was evolved. Augmentation personnel were called out on a more regular basis, with more direct input from the augmentees themselves in areas of surgery, surgical equipment, pharmaceutical and anaesthetic equipment." Culmination of the initial trial was conducted on Exercise Brave Paratum of 6 September to 14 October 1984, with further input the next year: "It is also planned to develop further concept of layout, equipment (surgical and anaesthetic), as well as procedural requirements at Rendez-Vous 85 (Wainright, Alta) during which time 1 CLFH will conduct a 100% augmentation of the Unit."[92] The new organization was thus not idle, major events in 1985 including a winter training programme in Petawawa in January and February, Exercise Snow Snake at the National Defence Medical Centre at the end of February, a visit to England (for only a small group of the unit's members) in March, Exercise Challenge Paratum/Rendezvous 85 in Wainright from 11 April to 26 June, Exercise Voyageur in Saskatchewan in May, Exercise Cool Stool in Petawawa in August, and Mobile Medic (a winter warfare exercise) in Borden in November.[93]

The trip to the UK, if only by a select few (six officers), was still fruitful, at least as far as the unit's annual historical report was concerned:

> In keeping with the promise of providing as much exposure as possible to allied medical resources, systems of medical treatment and evacuation, medical equipments for the latter as well as those provided for service support, a nucleus of 1 CLFH personnel and Surgeon General representatives ... were authorized to attend the United Kingdom Staff College Demonstration on casualty clearing evacuation within a theatre of operations. As well, a fairly detailed tour and briefing of 2 Field Hospital RAMC at Aldershot was accomplished.

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90. DHH 1326-2112, NDHQ to Distribution, 6 Apr 83; 1 Canadian Light Field Hospital Annual Historical Report, 26 Jul 84.
91. DHH 1326-2112, 1 CLFH Annual Historical Report, 10 Aug 85.
92. DHH 1326-2112, 1 CLFH Annual Historical Report, 10 Aug 85.
93. DHH 1326-2112, 1 Canadian Light Field Hospital Annual Historical Report, 25 Jun 87.

Regarding the results, the report related that

> After viewing 2 Fd Hosp physical set-up, discussing Cadre and reinforcement/augmentation concepts and relating to those of 1 CLFH as it presently exists, it would appear that our concept with regards to equipment, layout and procedures are extremely parallel and in some instances appear to tend towards a more "cadillac" organization. It would appear on a cursory examination that 2 Fd Hosp is too lean in terms of patient treatment and support services. It is appreciated that 1 CLFH would in reality strip to basic essentials,

if the task called for it. More specifically, "the Cadre strength of 2 Fd Hosp is considered to be more realistic i.e. 90 all ranks vice 36 of 1 CLFH," while "all operational training/call-outs take precedence over career courses and donating unit's requirements. This is an excellent philosophy which ensures guaranteed staffing. As is known, that situation does not exist presently for 1 CLFH Paratum series, with subsequent loss of effectiveness throughout." Also, although medical practitioners worked in permanent hospitals, they were in fact part of the field hospital's establishment, "and can be pulled" when needed. "Conversations indicate that all parties are pleased with such an arrangement and [it] appears to work quite well."[94] It should be noted here, however, that at the time the CFMS continued to place a heavy emphasis on clinical issues, meaning that the operational side of the service's role would not be considered a higher priority.

Nevertheless, the Field Hospital still had opportunities to train as a field hospital, perhaps its greatest challenge being to support divisional exercises which as we have seen the Canadian Forces organized every two years or so. The unit's contribution to RV 85 was, as we have also seen, called Challenge Paratum, where

> 1 CLFH was configured as a light general hospital designed to meet the medical requirements of approximately 14,000 personnel. This was accomplished by using the CFFET [Canadian Forces Field Equipment Tables] and personnel establishment of a forward surgical hospital. There were shortfalls and problem areas which occurred as a result of this drastic departure from normal establishment, however in summary the aim was achieved and 1 CLFH personnel gained a valuable experience.

As one would expect within an organization that deployed only occasionally, the Canadian Division had to relearn some lessons from scratch, problem areas from the Field Hospital's point of view being the lack of a permanently assigned laundry and bath unit, the shortage of training time for individuals, the improper deployment of personnel, and poor communications. However, some positive results were reported:

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[94] DHH 1326-2112, 1 Canadian Light Field Hospital Annual Historical Report, 25 Jun 87, Annex E, 26 Mar 85

> A test of new equipment used during this exercise received favourable response... The wheeled litter transporters were a valuable addition and should be considered for replacement of beds in the forward surgical hospital. Seventy would meet the bed requirements, a patient could remain on his litter and be processed through the surgical hospital upon it. A trial should be conducted within the operating room to see if the transporter and a litter could/could not replace the OR table.[95]

Generally, however, the unit learned more about its limitations than its potential. The exercise was, after all, "the first deployment of 1 CLFH to provide real-life medical coverage on this scale using integral resources and augmentation manpower since (circa) 1971. Unit organization is geared for surgical operations, not general hospital." It thus had "insufficient manpower" to deploy for a period of two to five months, and "Staff on hand was just adequate to meet daily shift scheduling and work req[ui]r[ements] plus additional extra duties reqr to maintain bivouac. Lack of GD platoon personnel stressed personnel beyond requirements:" (GD was a general duties group to take care of routine cleaning and similar tasks). Furthermore, the location offered limited experience of field conditions: "Hospital was sited and developed on a disused POW Camp/p[ara]de square (roughly 12 acres) to take advantage of available water and sewer drops. However, any experience and/or information that could be gained by deploying fully in a f[iel]d location was lost." There was also a "Lack of recreation/rest areas for ambulatory patients to allow break from bed confines." Finally, and more generally, the reports noted that "Due to the fact that 1 CLFH is not a permanently formed unit augmentees must quickly adapt to a new organization [and] environment while under new real life situations," its commander therefore suggesting that the unit come together for five days of training prior to any deployment.[96]

As Carl von Clausewitz had noted in the previous century, in war even the simplest thing is difficult, and even positive results offered no long-term assurances; for example, the report noted that "Floorboards provided an excellent floor. Due to cost/time of production, as well as bulk and weight, these boards will not be available for future operations. A requirement exists for a portable flexible flooring..." Another problem was the "Limited quantity of surgical linen drapes. Weight and bulk precluded large quantities be held. Extra work in washing, folding, packaging, wrapping and sterialization [sic] required valuable man-

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95. DHH 1326-2112, Post Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85.
96. DHH 1326-2112, Post Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85.

hours." One possible solution would be to use disposable linen. X-ray equipment was also cause for concern, being out of date and requiring over two and a half minutes to develop film,[97] a major hindrance to treatment should the hospital receive casualties in large numbers.

In a different vein, it was clear in hindsight that the handling of stores and equipment could have been better. After the first few days of the exercise, "portable outhouses, a walkway and an electrical connector box soon denied access to a vehicle any closer than 75 feet. As a result of this, all medical supplies had to be off-loaded and carried by hand resulting in considerable unnecessary work and use of time." Another problem occurred "with the actual timing of the sitings," the medical stores section being "the last part of the hospital to go up. As a result of this, the wards, the OR, the Emergency Department and Outpatient Department were demanding supplies before the Med Stores section even had floor boards down. (As an aside—the Med Stores Section was lucky to get floor boards—there was only sufficient to cover the ground in the first two sections of modular, the rest of the floor boards were loading pallets laid down after the tri-walls [packing crates] were empty). As a result of the heavy demand on Med Stores—the staff consisting of one Capt MAO Pharmacist and one Med A ... Cpl worked almost continuously for the first week." It was concluded that medical stores should thus be part of the advance party and be the first to physically set up, with in-routes kept clear of obstructions.[98]

As for the stores themselves, even with the experience of previous exercises there was still room for much fine-tuning: "The medical supplies carried by the Med Stores section were determined by reviewing the lists of items in RV81 and 83 by Fd Ambs and from lists prepared during Exercise Brave Paratum in the fall of 1984 plus from input by the surgeons and anaesthetists at NDMC and from the RV85 Standard for Me[d]ical Supplies. Unfortunately, there were many holes in these lists and a lot of make-due [sic] ingenuity occurred before the items became available." Clearly,

> The list of medical supply items must be standardized and abbreviated as much as possible. The trend toward disposables must be carefully examined in terms of bulk and re-supply. While it is true that some disposables are less bulky than the non-disposable items that they replace, when considered on a one for one basis, when they are considered on a usage basis the non-disposable items occupy a much smaller volume. In addition, if the supply line becomes squeezed or cut off, if disposables are used the hospital will cease to function when the last disposable is used

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[97] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85.

[98] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex P, nd.

> whereas with non-disposables it would be able to continue until all essential consummables [sic] are used up.

Perhaps disposable linens were not, after all, such a good idea.[99]

Obviously, the whole issue of stores had to be tied in with the field hospital's role, and in that regard Captain R. Palmer of the Central Medical Equipment Depot lectured that

> Although 1 CLFH did an excellent job fulfilling its role at RV85 it is obvious that we as medical professionals are still thinking more quality of medical care than quantity. When looking at the surgical role in war it is obvious that the emphasis must be on the latter. A quick reading of the NATO Handbook On Emergency War Surgery indicates that many of the procedures and treatments we are presently preparing for we will simply not have time to do when treating large numbers of casualties. A fine balance between quality and quantity must be achieved. The only way to find this balance is to put 1 CLFH into situations where numbers become a factor. With this in mind and with the provisio [sic] that the Medical Stores section of 1 CLFH be adequately prepared, 1 CLFH should be used for disaster situations by the Department of External Affairs. With the proper medical equipment, any medical team assembled from across the country, could provide assistance. Without the supplies they would simply be spectators.[100]

As we shall see in Chapter Ten, such a unit would indeed be formed in the 1990s.

Such lessons were learned as the unit treated 376 patients requiring 1,185 days of hospitalization. Eighteen were transferred to civilian hospitals, 29 to other military hospitals, and 26 were simply returned to their home units. Some common reasons for hospitalization were injuries, accounting for 154 patients, of which 70 were due to accidental falls, 26 for cuts and explosions, and 16 for air transport accidents including parachuting. Fourteen were due to vehicle accidents and 8 because of falls from vehicles. The emergency department provided treatment for 679 patients, 63 for acute respiratory infections, 52 for examinations, health advice, and follow-up care, and 50 for ill-defined symptoms. Of the 679, 260 were for accidental injuries, while of 607 actually treated, 329 returned to duty, 179 were admitted to hospital, 54 returned to light duty, 33 were excused duty, 7 were air evacuated to civilian hospitals, 4 were recommended to be returned to their units out of theatre, and one, who had suffered a head injury in a vehicle accident, died. The Medical Inspection Room, for its part, saw 1,560 patients, of whom 337 were for acute respiratory infections, 165 were

[99] DHH 1326 2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex P, nd.

[100] DHH 1326 2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex P, nd.

for follow-up examinations of one form or another, 134 were for sprains, and 94 were for skin infections.[101]

As usual, an important role for the hospital was to keep such numbers as low as possible, and "Preventive Medicine duties and responsibilities can prove to be extremely challenging and varied as shown by the RV 85 experience." One recommendation was that a Mobile Bath Unit be permanently assigned to the field hospital, since "In a hospital setting, the provision of adequate shower facilities for staff and patients is critical." Preventive Medicine (or PMed for short) staff conducted the usual routine, including daily inspections of kitchens, latrines, and messes, the task eased by the fact that "The potable water system provided minimized potential for water-borne infections. Routine tests for free available chlorine residuals and pH were performed on a weekly basis." Prevention seemed, in fact, to have been the least problematic aspect of the divisional exercise, staff noting that the requirement for 30 square feet per occupant in accommodations had actually been met. Similarly, it reported that "Safe water and food are essential to any military operation," without noting any problems in the area. In regards to sexually-transmitted diseases, however, some old lessons needed to be relearned: "The importance of confidentiality with regards to STD is extremely important. This confidentiality was breached by medical staff during RV 85. Medical staff must be cautioned regarding the seriousness of this breach of trust."[102] Serious as the problem may have been, it was the only black mark on the PMed staff's record for the exercise.

No matter how conscientious preventive medicine sections might be, there would still be illness and injury, as above the statistics demonstrate, and most such patients received medical attention within the hospital's treatment company. Outside of issues such as hygiene and sexually-transmitted diseases, however, this sub-unit found that its role differed depending on the type of operation the formation it supported was conducting: "Many of the problems encountered on this Exercise can be attributed to the fact that 1 CLFH is officially designated, equipped and theoretically staffed as a light forward mobile surgical facility not a small field general hospital," a comment we have seen elsewhere. "It was in the latter capacity, however, that it was required to function at RV 85. It is now necessary to ascertain how 1 CLFH should be organized, equipped, staffed, etc to meet the requirements of both its wartime and peacetime roles. Certainly, separate SOPs and equipment/

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101. DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, Annex L, 19 Aug 85.
102. DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex K, 29 May 85.

supply inventories are required plus different configurations and personnel establishments if both functions are to be carried out." Putting procedures into practice would, however, require rather grim training circumstances:

> Since 1 CLFH cannot exercise its purely wartime surgical role except by means of unrealistic simulated casualties, our only means of obtaining realistic training of any sort is to participate in major exercises of this nature where casualties and patients are of the "no-duff" type. However, in order for our patients to receive the best possible care under the circumstances, certain changes to the light forward surgical concept will have to be mandated for peacetime exercise support/humanitarian roles only,[103]

a conclusion with which many a potential patient might agree. Still, it was clear that it would simply not be possible to learn the proper treatment of battle casualties until the unit actually went to war. There were still some issues that could be sorted out in peacetime, such as the use of blood products. As the unit's laboratory reported,

> Blood banking seemed to be a source of much confusion for 1 CLFH at RV 85. There are no definitive directives on the usage of blood in the field... Blood banking appears to be problem free in a "non-war" situation where the provision will be through the Canadian Red Cross. However, this may not be the case in war or "crisis" situations where the relationship between the laboratory and the Department of Health and Welfare or the Canadian Red Cross services could be non-existent,

due to geography. Nor was there much guidance from the front lines of the Cold War, as, it was noted, "The European theatre is still a source of confusion on this subject, and no clear policy is available, or at least known to us."[104]

As for daily operations, the Field Hospital's laboratory was staffed by a warrant officer, a sergeant, and a corporal, and "These technicians were also used on a regular basis for the duties of latrine, kitchen, fire picket and duty NCO," which may have seemed like an additional burden, but could only have been avoided by increasing someone else's workload, such as that of an infantry section commander. Hierarchy could also be problematic from another perspective, where "The rank of corporal may present certain problems when operating the laboratory alone and having to deal with senior NCOs. No problems as such were experienced at RV 85 but potential situations of conflict were detected." Nor was that all when it came to dealing with personnel issues, as "There were no provisions to recall personnel from other units in case of further expansion of the laboratory. Also the opportunity of offering a very beneficial experience to personnel from closely located bases, by offering them short rotations through the lab, was not considered." The report also observed, "A large number of service personnel who attended the laboratory were French speaking, but unfortunately none of the personnel staffing in the laboratory were bilingual." At least when it came to basic facilities the laboratory was deemed to meet "minimal requirements," including "electricity, running water, sink, adequate ventilation and hard flooring."[105]

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[103] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex A, 9 Aug 85.

[104] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex C, 11 Jul 85.

When it came to the conduct of surgery, somewhat different issues came to the fore, one of them being the entire system of communications within the hospital. As the unit's anaesthetist reported,

> The rank structure of 1 CFLH ... divides the staff members into administrative and clinical branches. This concept is valid and to be retained, but since the command post which included the administration mainly was physically separated from the hospital complex, communication between branches was minimal and difficult. In future, the command post could be attached to the hospital. Also the installation of a system such as a public speaker to rapidly localize members of the staff is required when 1 CLFH is deployed and operational.

As for the surgical team itself, it comprised "one surgeon, one anaesthetist, one operating room nurse and two operating room technicians. In situations where the workload would be heavy, both surgeon and anaesthetist would be overworked." Two general duty medical officers needed to be added, both trained in Advanced Cardiac Life Support and Advanced Trauma Life Support. Their role would be "to help the surgeon and the anaesthetist in the pre-operative care as well as the post-operative care in the RR/ICU [Recovery Room/ Intensive Care Unit] area and on the wards."[106]

Although numbers might be lacking, there seemed to be no difficulties as regarded training and competence. Under the heading of "Nursing and Operating Room Technicians," the anaesthetist related that

> the operating room personnel was efficient, co-operative and highly qualified. All members must be commended for their excellent performance despite the stress induced by the unfamiliarity and inexperience in actual field surgery. Rotation of the augmentee personnel assigned to the surgical team every two or three weeks would allow more personnel to obtain first hand experience of working conditions in the field hospital.

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105. DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex C, 11 Jul 85.
106. DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex B, nd.

> During the last exercise, the surgeons and the anaesthetists rotated in this fashion in a very successful manner. For future exercises, this practice of rotation should be extended to all members of the surgical team."

An interesting conclusion was that

> If modern and safe equipment is provided and if dedicated personnel selected, medical practice in the field hospital can be justified from a legal point of view considering that it is the responsibility of the military to train and maintain their skills in field conditions. During Ex Challenge Paratum/RV 85, the practice of anaesthesia complied with current standards of anaesthesis practice. No untoward events or complications related to this practice occurred.[107]

In effect, the unit could justify performing surgery on exercise, to prepare for war, if it met civilian, peacetime standards in doing so.

Another activity that could be carried out in the field was physiotherapy, which was first applied in an exercise setting on RV 85. Some 196 patients were referred to a specialized section from 23 April to 2 June, about 15 to 20 for informal advice or simple quick treatment. According to a post-exercise report, about 166 patients "were able to contribute more fully to their units and derive more from the RV 85 experience. One can only speculate how many of these would have been RTU'd," or returned to unit, "if physio services were not made available. From this point of view, the need of a physiotherapy service in the field has been validated." The exercise also witnessed a breakthrough in field work, where "The results of the high voltage galvanic stimulation (HVGS) trial [using electrical current] proved that HVGS was found to be successful in reducing pain more effectively than any other modality used at any time by the physiotherapist." However (and there always seemed to be a "however' in these reports),

> The inability to provide proper treatment to patients with low back problems was a "sore" point in this exercise. Not only was there a lack of equipment, e.g. traction table, mobilization table; lack of space for privacy and lack of time to properly assess, the physiotherapist possessed only nominal mobilization and manipulative skills and therefore in most cases treatement [sic] for low back patients was directed at their symptoms and not at the cause.

Still, it was a problem that could be corrected, and it was recommended that a physiotherapy department become a permanent augmentation to the field hospital for all exercise purposes, staffed with a physiotherapist and an aide for every 5,000 personnel.[108]

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[107] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex B, nd.

[108] DHH 1326-2112, Post-Exercise Report, Ex Challenge Paratum/RV 85, 11 Sep 85, Annex D, 17 Jul 85.

RV 85 was a climactic exercise for 1 Canadian Light Field Hospital in a year which "continued the hectic pace of development of the light field hospital concept." Activities had included "the input from augmentees as well as cadre into the designing, testing and trialing not only various items of kit, but the overall concept of surgical and nursing requirements of a fully deployed field unit." On this series of manoeuvres the unit had "fully deployed the hospital in support of a divisional sized task force at Wainright, Alberta," and "This exercise also witnessed a medical milestone: the first surgery conducted under field conditions since the Korean War." Such developments "proved that a field hospital under normal Canadian Forces (TEMS) system, modified slightly for hospital use was a viable concept."[109] In a final word, the unit's commanding officer, after reiterating some of the organizational difficulties that had arisen from turning a surgical hospital into a more general facility, suggested that "Further doctrinal developments will undoubtedly force a complete review of employment and deployment of a light field hospital; a possibility of a smaller, more mobile surgical hospital is being studied."[110]

The unit was, in fact, renamed 1 Forward Surgical Hospital (abbreviated as 1 FSH), and while such doctrinal issues were being sorted out, it settled into an annual routine that would have been familiar to just about any other unit in the Canadian Forces, made up of preparations for exercises, exercises, post-exercise paperwork, individual training, and the myriad details that made up life in garrison and in the field. In 1986, when its strength was made up of three officers, a chief warrant officer, two master warrant officers, a warrant officer, seven sergeants, three master-corporals, fourteen corporals, and three privates,[111] future development was put on hold pending the publication of the 1987 White Paper on Defence.[112] Then came Exercise RV 87 when the unit "saw a 100% augmentation to conduct Exercise Encore Paratum to run concurrently with Exercise Rendez-Vous 87 at Wainright, Alberta. Concept of operations was similar to RV 85 in support of approximately 11,000 personnel: however, real life medical support was conducted from a field site to which 1 FSH deployed. This was the first occurrence in which a "field hospital" setup was actioned "in the field,"[113] without the utilities hook-ups that had been available in 1985. Results were more than satisfactory, Colonel R-M Bélanger, the Command Surgeon for Mobile Command, reporting that "There can be no doubt that the

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109. DHH 1326 2112, 1 Canadian Light Field Hospital Annual Historical Report, 25 Jun 87.
110. DHH 1326 2112, 1 Canadian Light Field Hospital Annual Historical Report, 25 Jun 87.
111. DHH 1326 2112, 1 Forward Surgical Hospital Annual Historical Report, 10 Jul 87, Annex A.
112. DHH 1326 2112, 1 Forward Surgical Hospital Annual Historical Report, 10 Jul 87.
113. DHH 1326 2112, 1 Forward Surgical Hospital Annual Historical Report, 15 Apr 88.

involvement of 1 FSH (augmented) provided all RV troops with medical care par excellence without which the lives of some would have been in jeopardy; in fact, the life of an American soldier was indubitably saved through the combined efforts of the staff of 1 FSH and aviators flying the aeromedevac mission. Medical support given to RV 87 by 1 FSH (augmented) was validated by the fact that such support is essential to the conduct of the RV series of exercises."[114]

One of the supposed lessons of RV 85, that the unit needed to focus more on surgery and less on general hospital operations, seems to have had no effect on higher authority, although there were no complaints as a result. Bélanger, for one, noted that

> Augmentation of 1 FSH, to provide medical services not found in a forward surgical hospital (i.e. psychiatry, internal medicine, etc...) will continue in future RV exercises and is highly recommended. It is suggested that, using 1 FSH as the building block, we establish a "field hospital" of 50 beds which would provide us with data necessary to assist in validating staff and equipment requirements for organizational planning.[115]

Interestingly, Bélanger noted, Force Mobile Command (FMC) Headquarters had not asked 1 Field Surgical Hospital "to consider providing Militia medical personnel to flush out shortages within 1 FSH; however, if such a requirement had been identified, efforts would have been made to meet same. It must be underscored that the training of Militia medical personnel tradespersons and officers is oriented to field ambulance and UMS [Unit Medical Station] employment and, in fact, several Militia personnel were so employed, including a Militia Medical Officer." The Militia was, in effect, the Army Reserve, and a new field hospital trade for reservist Medical Assistants had, in fact, been created. Once initial training was completed, Bélanger reported, "FMC will be better placed to provide Medical tradespersons with the training necessary for employment in a field hospital setting."[116]

The field hospital exemplified the stark fact that underlying the CFMS' many challenges was one focussing thought—the possibility that the Canadian Armed Forces might be called upon for a major operation, the expectation being that should war come about, the enemy would be the Soviet Union. As we shall see, that confrontation never occurred, but it may be useful to remind the reader that, as we have seen in a previous chapter, the human world is a highly unpredictable

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[114] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 15 Apr 88.

[115] DHH 1326-2112, Col R M Belanger, [FMC] Command Surgeon, to Distribution, 16 Jul 87.

[116] DHH 1326-2112, Col R M Belanger, [FMC] Command Surgeon, to Distribution, 16 Jul 87, Annex A.

The Field Hospital set up outside the National Defence Medical Centre, 1995
Canadian Forces Joint Imagery Centre, MPC 95-014-44

one, and when the Canadian Forces Medical Service was indeed called upon to operate in the field, it would not be at a place or time that it had planned for.

Chapter Ten

After the Cold War

From the period soon following the end of the Second World War to the last quarter of the twentieth century, the various medical branches and the Canadian Forces Medical Service, as we have seen, took on an ever-increasing list of responsibilities as they attempted to provide comprehensive support to members of the armed services, their families, and occasionally to local inhabitants living near military facilities. In the 1980s that trend began to reverse itself somewhat with the closure of hospitals, amalgamations with civilian facilities, and the focus on supporting operations in the field. Two developments exemplify this evolution in excellent fashion: the creation of a field hospital beginning in the late 1960s, which we have already seen, and the formation of a rapid response team thirty years later, which will be one of the topics of this chapter. This increasing emphasis on operational support was a logical outgrowth of an explosion of international missions Canada took on beginning in about 1989. Not only did the country's commitments increase in scope, but they also became more dangerous, Canadian operations in war-torn Croatia, for example, placing troops in fighting conditions unseen since Korea, with attendant casualties caused by stress and fatigue. Although of course issues such as preventive medicine and public health still loomed large in the 1990s, the tactical became a more important part of the medical.

Forty years after the outbreak of war in Korea, the previous occasion on which the Medical Service had deployed for an armed conflict, Iraq invaded its neighbour Kuwait and annexed it. The invasion was the first time a member of the United Nations in effect disappeared, and as in Korea the United States opted to intervene with UN resolutions as legal underpinnings. The Canadian government also deemed it within the nation's interests to support operations aimed at restoring Kuwaiti sovereignty, and a naval task force of three ships soon left for the Persian

Gulf in what was called Operation Friction. Medical preparations to support the mission began at the Regional Medical Equipment Depot in Debert, which "was tasked with providing medical supply support to HMC ships involved in Operation Friction. This resulted in a considerable increase in the workload and necessitated all personnel to work extended hours to accomplish the task." The depot's role lasted from 11 August to 6 November 1990.[1]

Also in support was the Central Medical Equipment Depot (or CMED), where

> This operation started in support of the Navy and then later in the fall included Op Scimitar [air operations] and Op Accord [the creation of a headquarters]. It was not only significant in terms of size, but also new in that it involved MARCOM [Maritime Command] and a greater emphasis on medical equipment,

as opposed to simple supplies. In addition, the unit reported, "the NBC [Nuclear, Biological, and Chemical Warfare] kits and prophylactic supplies became of greater importance. CMED dispatched two direct shipments (5 ton military vehicles) direct to RMED Debert and Halifax Dockyard. For the first time in recent memory, CMED staff were placed on two-hour standby during one weekend. As it turned out, the ships left later than anticipated but it was not from a lack of medical supplies and equipment. CMED has continued to provide new and replacement supplies through RMED Debert." Total cost was about $450,000. Related to the task of naval support was Operation Royal Sword/Scimitar:

> This operation in support of the Air Force came in the midst of Op Friction, to which it became amalgamated by the end of Nov. This operation added greatly to our workload. The initial secrecy and degree of unknowns became frustrating because of requirements to prepare dangerous cargo and kits for shipment. There was also some duplication of effort as 319 FMED [Forward Medical Equipment Depot, in Germany] was tasked to develop kits, which in fact were already available at CMED. It also became very apparent during this operation that medical supplies needed to be shipped as a higher priority... The requirements for extra vaccines, biologicals and NBC materiel was significant.[2]

Then, as the depot later related, "A warning order was received in Jan that Field Surgical Hospital was to deploy to the Persian Gulf as 1 Canadian Field Hospital. Petawawa became the deployment base," as well as the supply depot "for vaccines, new NBC material and even new burn dressing material... CMED became involved by assembling and

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1. DHH 1326 1211, RMED Debert, Annual Historical Report, 20 Feb 91.
2. DHH 1326 1910, Central Medical Equipment Depot, Annual Historical Report, 12 Mar 91

issuing some major kits including: field lab, field x-ray, PMED [preventive medicine], NBC kits, and a new ASC," or advanced surgical centre. In addition, a significant amount of materiel was issued to upgrade the Field Surgical Hospital's stocks to the level of a Canadian Forces Hospital. Specialists "were also heavily involved in preparing equipment and carrying out technical inspections... CMED also assembled and shipped a MSD (Medical Supply Detachment). This was the first time that such a detachment was assembled to support a war. Only three people from CMED went to operate the MSD but this was primarily due to a manpower ceiling for the deployment. Had conflict continued this would have been a very busy unit likely requiring more staff."[3] About 4.66 million dollars' worth of medical supplies were sent to the Persian Gulf.

The depots were only a few of the many medical units to become involved in the Gulf War, most of them by providing personnel for operations in the area. As Canadian Forces Medical Group Headquarters reported, for the fiscal year 1990-91,

> The second quarter was in large part taken up with the Persian Gulf crisis. To begin, the group's support was limited to resupplying the navy's operational group as part of Operation Friction. In time, however, the Medical Group's participation increased considerably in scope with Operation Scimitar [the deployment of a fighter squadron]. A medical team of twelve people, from the Medical Group and from the base at Baden, was formed. It was supplied with equipment from 313 Field Hospital [in Germany] allowing it to operate twenty beds. The deployment for Operation Scimitar began on 4 October.[4]

Headquarters pointed out that it conducted such operations, and others as well, "while maintaining its peacetime obligations."[5]

As for headquarters, so for individual units. For 1 Field Ambulance the deployment was significant:

> Personnel from 1 Field Ambulance participated in the joint Canadian Headquarters at Bahrain, the Canadian Field Hospital in Al Quaysumah and the post war mine clearing operations in Kuwait. The field operating skills of our personnel were critical to the success of the field hospital. This underscores the absolute necessity of maintaining a cadre of personnel who have both medical skills and field operations training.

In that vein, the unit's commanding officer, Lieutenant-Colonel S.F. Cameron, concluded his report with the observation that "Through

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3. DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 25 Mar 92.
4. DHH 1326-3269, Rapport historique de 1990, Groupe médical du Canada, 21 août 91 [author's translation].
5. DHH 1326-3269, Canadian Medical Group Headquarters, Historical Report, 29 Jan 93.

their achievements in real wartime operations, 1 Field Ambulance personnel have reaffirmed the requirement for armies to maintain adequate medical capability."[6]

No 2 Field Ambulance's experiences were little different as it "was tasked to provide logistical, medical and administrative personnel to support the liberation of Kuwait." Specifically, the unit contributed to three different operations. First was Operation Accord, where "2 Field Ambulance was tasked to provide a Physician Assistant to set up and operate a Unit Medical Station at 90 Canadian Headquarters and Signals Squadron in Bahrain, Saudi Arabia. WO Bendell, the Physician's Assistant tasked to Op Accord, was in theatre from 9 Oct 90 to 18 Apr 91." Second was the afore-mentioned Operation Friction, where, "In January, one Medical Assistant was tasked to the HMCS Protecteur, the AOR [Oiler Replenishment] Ship serving in the Persian Gulf as part of the Canadian Joint Task Force. Cpl Harris, the 2 Field Ambulance QL5 Medic, was assigned duties in the sick bay of the replenishment ship." Last but certainly not least was Operation Scalpel, which will be described in greater detail below. For that mission, it was reported, "2 Field Ambulance posted 29 personnel (medical, logistical and administrative) to 1 Canadian Field Hospital... Our primary function was to augment, to war establishment, the resources of 1 Canadian Field Hospital." Also, "2 Field Ambulance personnel were tasked to be the Shadow Organization responsible to replace the Canadian Field Hospital personnel," as they left their peacetime units to begin training for their wartime role.[7]

With 1 and 2 Field Ambulances, representing the sharp end of medical support, undergoing preparations, other work was being done at the other end, in the realm of research. The establishment at Suffield, which as we have seen first operated during the Second World War, had continued to conduct experiments ever since, researching defensive measures, such as clothing and respirators, or even antidotes against a wide variety of chemical and biological threats (hence CB, or chemical and biological programme). These threats included agents that choked people to death, poisoned their blood, blistered their skin, or disrupted their nervous systems. It was no small challenge, and an annual report for 1988 pointed out how

> In recent years advances in organic chemistry and biotechnology have led to concern that an agent or agents might be found which could defeat the protective capacity of the modern respirator, or at least reduce significantly the length of time the protection would be effective. The testing of new categories of compounds to ascertain both the effectiveness of our

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[6] DHH, Annual Historical Reports, 2103, For Year 1991

[7] DHH, Annual Historical Reports, 2104, For Year 1991

> protective equipment and our ability to detect agents and decontaminate personnel and equipment, is an important component of the Canadian CB defence program.[8]

At the time, such work fell under the auspices of the Chief Research and Development (CRAD), the smaller successor to the Defence Research Board, who reported to the Assistant Deputy Minister for Matériel (ADM Mat). CRAD oversaw a half-dozen establishments, with chemical and biological research conducted mainly at Defence Research Establishment Suffield and Defence Research Establishment Ottawa (DREO), though the different nature of their tasks can be gleaned from the fact that Suffield had a Medical Advisor while Ottawa did not, since it conducted little chemical work of its own. Research was also conducted at the Defence and Civil Institute of Environmental Medicine in Toronto as well as in various industries and universities.[9] In the fiscal year 1989-90, the programme involved 41 scientists and engineers, 51 technologists, and 6 military personnel, or almost a hundred staff in all, many holding doctoral degrees in engineering, chemistry, biochemistry, pharmacology, microbiology and virology," a mix similar to that at Suffield immediately following the Second World War.[10]

Therefore, when Cabinet decided to involve Canadian Forces personnel in the Gulf War, under the general designation of Operation Friction, various establishments in the country had been conducting chemical and biological warfare work for five decades. Nor was the threat of such an attack to be taken lightly, since in the 1980s Iraqi forces had used chemical agents against the Iranian army and the Kurdish minority, and had showed no inclination to practise restraint should a coalition attempt to force them out of Kuwait. Defence Research Establishment Ottawa therefore "accelerated its on-going work to provide troops with a new chemical protective suit without the high physiological heat stress of older protective garments. As well, DREO contributed the C-4 masks for ground troops," the C-4 being a respirator, and in concert with the Defence and Civil Institute of Environmental Medicine it also developed a version for aircrew: "Production of limited quantities of these masks using experimental development moulds was carried out to meet the requirements of Operation Friction." As for the laboratories at Suffield, their contribution included an antidote to a nerve

8. DHH 89/91, William H. Barton, Research, Development and Training in Chemical and Biological Defence, 31 Dec 88.
9. DHH 89/91, William H. Barton, Research, Development and Training in Chemical and Biological Defence, 31 Dec 88.
10. DHH 92/68, Review of the Chemical and Biological Defence Program, January 1990 – April 1991, 8.

gas called HI-6, "Mobile Air Sampling Units and Chemical Agent Detectors," and a skin decontamination lotion.[11]

The skin lotion had been in development for over a decade, and differed from other forms of protection in that it did more than form a barrier or provide an antidote after exposure: "The main obstacle in the lotion's development was to produce a formulation which would cause the mustard or other chemical agent to decompose without damaging the skin," although the version deployed in the Gulf War seems to have met those criteria. It could also be removed by washing in water, and it was intended to serve in a variety of scenarios: "The lotion is designed for use following a chemical attack, in the event that skin is contaminated with chemical agent(s) before protective equipment is fully donned or in the event that protective equipment must be removed while chemical agents remain in the area. For example, medical personnel might use the lotion when in contact with victims of a chemical attack or it could be used during clean-up operations where small amounts of chemicals are still present." Also of interest was a protective suit which, because it was worn next to the skin, allowed the wearer to remove outer clothing to reduce the chance of heat stress. This author, having worn an older version that covered the combat uniform, encouraged copious perspiration, and generally made the wearer a picture of misery, can attest that such a development was definitely a step in the right direction.[12] (The suit, however, has yet to be deployed.)

Medical support was thus quite varied, but it was the provision of a field hospital that proved the most challenging, the process beginning in November 1990. That month, "1 Forward Surgical Hospital (1 FSH) commenced preparation for possible deployment to the Gulf in support of Operation Broadsword," which would have seen Canada contribute a brigade to the Coalition. However, "Planning was terminated when Canada decided not to commit 4 Canadian Mechanized Brigade Group to the forces in the middle east. The state of readiness of the Unit, however, had increased significantly and all Cadre personnel were mentally prepared to go to war." Such was fortuitous, for "On 2 January 1991, the Cadre Commanding Officer, Major R.B. Moneypenny, was advised that 1 FSH might deploy to the Gulf Area in support of British Forces Middle East (BFME)... All Cadre personnel were ordered to return to the Unit from leave and preparation for war commenced." One of the first steps in the deployment was an IPC, or initial planning conference, where "it was disclosed that during the development of the

[11] DHH 92/68, Review of the Chemical and Biological Defence Program, January 1990 – April 1991, 11.

[12] DHH 92/68, Review of the Chemical and Biological Defence Program, January 1990 – April 1991, 12-13.

medical appreciation for Op Granby [the British deployment], the Ministry of Defence for the United Kingdom (MODUK) had estimated that the casualty rate amongst their own troops would be 8% of forward troops and 2% of rear troops, per battle day. This estimate included Naval and Air Force personnel and, for convenience, was averaged out at 5% overall. To this, the medical planners had applied a "standard" four day holding policy in the field hospitals to determine the total bed requirement (taking into account the anticipated proportion of the dead, of those who could be quickly returned to their unit, and of those who could be evacuated from the KTO," or Kuwait Theatre of Operations, "without the need for surgical intravention [sic]). As a result, they reckoned that they had a need for 1850 hospital beds "in theatre."'[13]

However, planners had underestimated their needs: "The UK planners also decided that any allied casualties brought into their chain-of-evacuation would be treated and returned to their own national authorities when stabilized and that UK medical support in the Gulf region would not be established or staffed to support other than their own forces. Therefore, no additional beds were added for friendly casualties inducted into the British medical system."[14] There were other issues to take into account, however, and "The initial medical estimate did not include Enemy Prisoners-of-War (EPW) and, later, the UK planners concluded that during the first five days of the war some 12,500 EPW might be taken by 1 Arm[oure]d Division. Because the Geneva Convention requires that the capturer provide to the prisoner medical care equivalent to that rendered his own troops, this had a serious implication on the total hospital bed estimate. It was assumed by MOD that 5% of the EPW would be wounded, needing hospital treatment at the same time as their own. Further, since it would not have been appropriate, under the terms of the Geneva Accords, to establish a separate chain-of-evacuation for EPW it was envisaged that enemy casualties would be brought back through the same lines of communication as UK personnel. Consequently, it was determined that an additional 600 beds "in theatre" were required to allow for the treatment of EPW." A quick count revealed that "This brought the total bed requirement to 2450, (a short-fall of 600 beds) and, at this stage, all available regular force medical staff from British Forces Germany had been deployed and a compulsory call-up of all medical reservists in Britain was underway."[15] The British therefore asked the Canadians to provide a 100-bed hospital to relieve at least some of the pressure.

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[13] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
[14] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
[15] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.

The plan called for 1 Forward Surgical Hospital

> to establish a hospital in support of ops in the Persian Gulf as part of the British Medical System (BMS), providing limited third line support to 1 Armoured Division (1 Armd Div). Initially, the Unit was to deploy with 33 Field Hospital (UK) for acclimatization, training and familiarization with British Standing Operating Procedures, equipment and treatment protocols.

After this stage,

> the Unit was to move forward, to an area within the Divisional Administrative Area (DAA) where it would function as an independent unit or co-locate and work with 32 Field Hospital. As the battle progressed, it was thought that 1 FSH would next work in concert with 22 Field Hosp (UK) to provide mobile surgical support to 7 Armoured Brigade (UK). The idea being that, during a rapid attack, one hospital could leap-frog the other, thereby keeping in contact with the manoeuvre formation and reducing the time-lag for the casualty from point-of-wounding until his arrival at the first surgical facility.

There was yet another possibility, "that 1 FSH would be used as a stand-alone facility providing medical and surgical support to a camp for EPW."[16]

Any of the above roles would prove a supreme challenge, as 1 Forward Surgical Hospital's shortfalls seemed to outnumber its capabilities. Among the former were "a limited, post-operative, 60-bed holding capability," "no capacity to manage NBC casualties," "minimal tactical and non-tactical communications support," "an extremely small service support element," "no security force," "limited mobility," and the fact that the hospital "did not have the ability to store and transport water and POL [petroleum, oil, and lubricants] in the quantities which would be required for a hospital operating in a desert environment."[17] Further, as the official history of the war relates, with only nine surgeons and nine anaesthetists in Canada's regular force, the field hospital, "With one blow... drained the Canadian military medical system."[18]

Regardless, such problems would have to be resolved, since it had been decided at the initial planning conference that the unit would "form the basis of a 100-bed field hospital; retain its role as a forward surgical hospital; be self-supporting at first and second line; be reliant upon UK resources at third line; and, have a defence and employment element to provide protection and to perform stretcher bearer duties." On 7 January 1991 it was renamed 1 Canadian Field Hospital, with Lieutenant-

16. DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
17. DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
18. Jean Morin and Richard Gimblett, *Operation Friction 1990-1991: The Canadian Forces in the Persian Gulf* (Toronto, 1997), 217.

Colonel J. Kotlarz as commanding officer, its deployment being authorized by the Government of Canada on 16 January. In accordance with pre-war planning, "The Unit organization was built upon the Cadre and augmentee structure of 1 FSH. Personnel were drawn from every command in the Canadian Forces and equipment was supplied by Army units at the direction of Force Mobile Command (FMC HQ). The total strength of the Unit which would deploy, including the National Support Element, was 535 all ranks," a scope not seen since the Second World War.[19]

Petawawa was designated the mounting base, no doubt because it was home to the field hospital's cadre, with all the unit's primary personnel to be present by 22 January:

> The Royal Canadian Regiment Battle School, commanded by LCol S.T. Groves MM CD, was tasked as the training agency for the Unit. This was particularly necessary since the majority of augmentee personnel had never served in a field hospital before and approximately one-half had never served in the land environment (this was further complicated by the fact that about one-third of the Unit strength were officers). Training at the battle school concentrated on basic soldierly skills, field living, small arms handling, action after capture and NBC individual protection drills.[20]

Lieutenant Rebecca Gowthorpe recalled the indoctrination:

> Prior to deploying, we were all given a crash course in nuclear/biological/chemical warfare since the threat of chemical warfare was great. At the end of this training, we were all able to put on and remove gas suits, gloves, boots and masks in seconds. Training also included the care and decontamination of patients and their injuries in such conditions and small arms training. All personnel were issued with a 9mm pistol for personal and patient protection.[21]

Gowthorpe and her colleagues were deployed through Halifax and Trenton to Jubail al Sinaiyah.[22]

As the reader probably knows well, the Gulf War on the ground was a very short one. For the field hospital,

> Full deployment was curtailed by the shortness of the war, consequently, only the surgical elements were set-up and were attached, physically, to 32 Fd Hosp. The X-ray, laboratory, and two of the wards moved forward, however, they were not established on the ground. The balance of the Unit remained at Camp Al Halla (Al Jubayl) for the duration of the war.[23]

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[19] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.

[20] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.

[21] E.A. Landells, *The Military Nurses of Canada: Recollections of Military Nurses* (White Rock BC, 1995), 522-523.

[22] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.

The Field Hospital in the Gulf War. Canadian Forces Joint Imagery Centre, ISC 91-60-72-2

Still, there was plenty to do: "By 26 February the advancing British Division was discovering more and more wounded, mostly Iraqi survivors of the preparatory bombings for the ground attack. They were dirty and emaciated, with wounds several days old and unattended, already subject to suppurating infections. Given enough first-aid treatment to keep them alive, they were evacuated in large numbers by ambulance and helicopter to Coalition hospitals," the same level of technology that inflicted their wounds being used to provide succour.[24] As the official history relates,

> Patients were sent to the resuscitation sections of the two hospitals according to a priority system. As soon as they arrived, they were stripped of their soiled clothes, searched by the guards, examined by the doctor on duty, and sent for medical or nursing care. Some needed radiology, laboratory work, or examination by a specialist or surgeon. Most of the wounded had not eaten for several days, and some had been unconscious or only semiconscious for a long time. Selected Kuwaitis acted as interpreters... Surgery was performed on about 10 percent of them. The rest were bandaged, cleaned, sewn up, and plastered. In most cases, these simple measures, accompanied by good meals, were enough to restore their strength, so that they could be sent under escort to the British prisoner-of-war camp, where other medical personnel would conduct secondary, follow-up care. A small number were evacuated to the third- or fourth-line American or British hospitals.[25]

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23. DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
24. Jean Morin and Richard Gimblett, 229.
25. Jean Morin and Richard Gimblett, 229.

According to Gowthorpe, however, "Iraqi soldiers had been told terrible things about how we would treat them (i.e. poison them, etc); before they realized that we meant them no harm they took much encouragement to let us treat or feed them."[26]

In the Canadian hospital,

> A total of sixty-nine casualties were seen during the 100-hour war. The majority involved complicated injuries caused by multiple gunshot wounds, and shrapnel from mines, bomblets and booby traps. Twelve major operations were performed, which included bowel resections and the application of external fixation devices for limb threatening injuries. Although surgical teams throughout the theatre of war were not overwhelmed with high numbers of casualties the complexity of injuries caused by the effects of modern weapons stressed the limited number of surgical teams.[27]

An excellent example was provided by the official history of the conflict:

> On Friday, 1 March, the day after the fighting stopped, a seriously wounded Iraqi soldier arrived at the Canadian hospital. He had received shell fragments to his head, his nose had been almost completely blown off by an explosion, his right arm was considerably lacerated and infected, and his whole right side was riddled with holes from shell fragments. Surgeons Lieutenant-Colonel Ian Anderson and Major Barry Armstrong and orthopaedic surgeon Major Charles Buckley, assisted by an otorhinolaryngologist from 32 Field Hospital, spent nine hours cleaning and suturing his wounds to save him. They even opened his cranium to take out metal and bone fragments, which had penetrated up to three centimetres into the right and left frontal lobes of his brain. The patient was conscious and lucid before the operation, however, despite an infection which had had five days to spread. He had been left for dead by his fellows at the bottom of a trench and was discovered when British troops inspected the ground. Few believed that he would pull through, but the surgeons noted in their diagnosis that the patient had resisted his wounds extremely well, perhaps because of the nighttime cold, which had retarded the putrefaction of the wounds.

Major Buckley visited the patient a few days later, and he was well on his way to recovery, though it should be noted here that in more pressing circumstances it would have been necessary to amputate his right arm.[28]

The war having ended, 32 British Field Hospital was shut down, leaving the Canadian unit to take over. It was only for 24 hours; however, "it was the only day when 1 CFH worked at full capacity,"

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26. E.A. Landells, 522.
27. DHH 1326 2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92.
28. Jean Morin and Richard Gimblett, 230.

Surgery during the Gulf War. Canadian Forces Joint Imagery Centre, ISC 91-60-60-1

treating 83 patients, the same as all previous days combined.[29] The Canadian unit ceased operations on 3 March and returned to Petawawa in early April, the time having come to reflect on the lessons learned in the previous months. An obvious conclusion was that

> Deployment of the Unit from Canada to Saudi Arabia was a massive logistical undertaking predicated, mainly, upon being highly mobile. The experience gained by the military medical service would strongly support co-operative planning and training by militia and regular force medical personnel. Such a coordinated effort would help prepare the Canadian Forces Medical Services to respond to disasters in Canada, humanitarian missions abroad or during Defence of Canada Operations.[30]

The CFMS, as it had after the Second World War, also had to respond to the long-term health consequences of modern conflict, of which perhaps the most controversial was Gulf War-related illness, known more popularly as Gulf War syndrome. Both expressions are somewhat misleading, however, failing to convey the horrendous complexity involved, Kenneth C. Hyams and others describing the medical situation as it evolved in the early 1990s. "After the war ended, troops returned home, and veterans from diverse military units of the United States, Great Britain, and Canada began reporting various chronic symptoms," including "Fatigue, headache, muscle and joint pain, diarrhea, skin rashes, shortness of breath, and chest pain..." Hyams and his colleagues reported, "Various neuropsychological symptoms have also been common—particularly sleep disturbances, impaired concentration, forgetfulness, irritability, and depression." Investigations were in order, and "Clinical examination of more than 80,000 veterans and initial epidemiologic surveys have identified a broad range of health problems, including symptoms of post-traumatic stress disorder in 5% to 15% of some veteran populations..."[31] Other studies discovered that symptoms found to be elevated among Gulf War veterans were consistent with such diagnoses as chronic fatigue syndrome and multiple chemical sensitivity, themselves including such ailments as fibromyalgia, irritable bowel syndrome, and others. In effect, "Illnesses identical to the complaints reported by Gulf War veterans are found in civilians who have never served in the Armed Forces, let alone taken part in the Gulf War."[32] (Interestingly, and somewhat parallel to the above findings, near the end of the Second World War one medical author noted that "The neuropsychiatric casualties in civilian life are also greater because of the stresses of war, and the worker who breaks down in industry gets the benefit of these methods," that is to say, the use of drugs and hypnosis.[33] As we saw in examining the Korean War, psychological stress is not limited to combat.)

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[29] Jean Morin and Richard Gimblett, 231.

[30] DHH 1326-2112, 1 Forward Surgical Hospital Annual Historical Report, 20 Jan 92

The result of Gulf War research was thus a Gordian knot of many strands, as described by Ben Shephard in *A War of Nerves*: "What could have caused these symptoms? Suspicions focussed on four factors..." The first was "enriched uranium shells," though here the author was mistaken, as the coalition used depleted uranium, which is far less hazardous to human health. Still, they "had been used in large quantities and handled by many servicemen..." Second were "the vaccines given to the troops to protect them from Saddam's chemical and bacteriological weapons..." Third were "the organo-phosphate chemicals," for controlling insects, "which had been sprayed around with some abandon during the campaign..." Finally, suspicions turned to "Iraqi nerve agents in a bunker blown up by the Allied troops." That symptoms of illness varied widely from one individual to another should thus have come as no surprise, although "One trend soon emerged. The high-profile cases reported in the media tended to be suffering from neurological damage that might have been caused by exposure to some specific chemical or biological toxin; some patients were ill or visibly dying, others appeared to have passed birth defects on to children conceived since the war." However, "the symptoms described in large-scale surveys of Gulf War illness tended to be much vaguer, with the interpretative emphasis put more on psychophysiological factors. For example, a panel of experts appointed by President Clinton found no evidence that the long-term effects reported by veterans could have been caused by low-level exposure to toxins, but substantial evidence of affects caused by "stress"," otherwise known as shell shock, battle exhaustion, or combat stress reaction.[34] In effect, Shephard's four factors had become five, and by the time of writing this narrative had expanded to over thirty.[35]

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[31] Kenneth C. Hyams et al, "War Syndromes and their Evaluation: From the US Civil War to the Persian Gulf War, *Annals of Internal Medicine* (v.125), 402.

[32] King's College Gulf War Illness Research Unit, "Ten Years On: What Do We Know About the Gulf War Syndrome?' c.2001.

[33] Morris Fishbein, "Doctors at War," Morris Fishbein, ed, *Doctors at War* (New York, 1995), 18-19.

The issue was thus of extreme complexity, as Hyams and his colleagues noted. "No medical reports of similar unexplained illnesses among other coalition troops or among persons indigenous to the Persian Gulf have been published." Also, given the wide range of symptoms, "a new or unique syndrome has not yet been identified," while "Preliminary results of epidemiologic studies of the Persian Gulf War show no overall increase in hospitalization rates, birth defects, or mortality due to medical causes."[36] In fact, "since the war the mortality rate of US Gulf War veterans has been less than one-half that of the demographically comparable civilian population,"[37] a not-unexpected result given that soldiers, sailors, and air personnel are not recruited unless they are deemed healthy, but something of a surprise given media coverage of Gulf War veterans' health problems.

Focussing on single causes created nothing but confusion: "For example, Canada sent three vessels to the Gulf—two used pyridostigmine prophylaxis," or PB, a counter-measure to nerve gas, "and one did not. Yet rates of illness were identical between the three ships. Likewise, Danish Gulf veterans also have elevated rates of symptomatic ill health, yet nearly all were only involved in peace keeping duties after the end of hostilities and neither used pyridostigmine prophylaxis nor received vaccinations against biological agents."[38] In fact, all three Canadian ships had taken the counter-measure, but from 15 to 18 January 1991, so that the first complement of HMCS *Protecteur*, which rotated home around New Years Eve 1990, did not receive it.[39] PB is therefore an interesting case in point, as it had at one time been pointed to as a possible cause of Gulf War-related illness, but

> The Canadian experience ... argues against a prominent role for PB. PB has been used in civilian practice for the diagnosis of growth hormone

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[34] Ben Shephard, *A War of Nerves: Soldiers and Psychiatrists in the Twentieth Century*, (Cambridge, Mass., 2001), 382-383.

[35] K.C. Scott to Bill Rawling, 20 Mar 03.

[36] Kenneth C. Hyams et al, "War Syndromes and their Evaluation: From the US Civil War to the Persian Gulf War, *Annals of Internal Medicine* (v.125), 402.

[37] Kenneth C. Hyams et al, "Protecting the Health of United States Military Forces in Afghanistan: Applying Lessons Learned since the Gulf War," *Clinical Infectious Diseases* (No 34, 2002), S208

[38] King's College Gulf War Illness Research Unit, "Ten Years On: What Do We Know About the Gulf War Syndrome?" c.2001.

> disorders and the treatment of myasthenia gravis for many years, and in higher doses than used by the Armed Forces, without apparent adverse effect. It has even been used as a treatment for the fatigue associated with post polio syndrome, and although later studies questioned its efficacy, it was safe and well tolerated.[40]

In Canada, coming to grips with such illnesses was not helped by the fact that symptoms among Canadian service personnel became apparent only slowly, first coming to the attention of military medical practitioners in August 1991, when a single veteran of Operation Friction entered a chronic fatigue clinic being run by the Canadian Forces. By the fall of 1993 about ten patients with such service who also suffered from symptoms consistent with that illness had received treatment, a number not considered abnormal given the tens of thousands of people in uniform at the time. As the number of Gulf War veterans presenting themselves with symptoms increased, however, it was decided in April 1995 to organize a clinic and registry in Ottawa that would focus on their health issues.[41] The initial assessment screening was scheduled to take an entire day; most took three to four hours, though one required ten and another only needed 60 minutes. "The point was," Colonel K.C. Scott later related, "the veterans were given whatever time it took to thoroughly evaluate their complaints at this first encounter. Additional consultations and investigations were done during the subsequent two week admission to hospital (most, in fact, were admitted because they were from out of town)."[42]

By December 1997 the clinic had seen 104 patients, each receiving an examination and a comprehensive range of tests, including consultations with specialists; over 90 of them underwent psychiatric examination. Of those suffering symptoms, the largest group raised no particular alarms, being diagnosed with such conditions as asthma and high blood pressure which would be expected in a certain number of serving personnel in any case. The next largest group suffered from musculoskeletal disorders that could be attributed to accidents and similar incidents in the Gulf War. The third largest group was made up of individuals suffering from mental health ailments, such as major depression, anxiety disorder, post-traumatic stress disorder, and others. The Ottawa facility was shut down because such symptoms, regardless of the group they appeared in, were similar to those that followed other deployments, and

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39. K.C. Scott to Bill Rawling, 20 Mar 03.
40. King's College Gulf War Illness Research Unit, "Ten Years On: What Do We Know About the Gulf War Syndrome?" c 2001.
41. Interview with Colonel Ken Scott, 25 Sep 02.
42. K.C. Scott to Bill Rawling, 20 Mar 03.

it was thought preferable for patients to see internal medicine and other specialists at armed forces clinics nearer their homes.[43]

Suspected causes, as we have seen, were many and varied, though several that had been first theorized in relation to US and British forces did not apply to the Canadians deployed to the Gulf War. There was, for example, very little exposure to organo-phosphate pesticides. The navy was, of course, at sea, the Canadian headquarters was in Manama, Bahrain, where little or none of the poison was used, and the mission generally was carried out during winter months, when insect activity was low to non-existent and hence when pesticides were not deployed. Another suspect, exposure to nerve agents following the destruction of an Iraqi chemical weapons depot at Khamisiyah, also failed to explain illness among Canadian personnel. Computer modelling later placed no Canadian units within range of the toxic plumes the demolitions created.[44]

While veterans of Operation Friction were undergoing testing and treatment, and following a 1996 recommendation by Professor Anthony Miller, DND approached an outside agency to examine the complexities of the "health experience of veterans of the 1991 Persian Gulf War."[45] Goss Gilroy Inc, of Ottawa, surveyed those who had served in Operation Friction as well as a sample of Armed Forces personnel who were on duty elsewhere at the time. Almost three-quarters of the over 4500 uniformed people who saw service in the Gulf responded, although as the study warned, "Non-response among GWVs," that is to say, Gulf War Veterans, "could mean that those who are well might not have cared to spend the time responding," hence introducing an error factor. Another possible source of error was "recall bias," where a patient might, years after an event, attribute symptoms to it due to imperfect memory, when in fact the cause was at some other place or time or simply unattributable.[46]

That being said, Goss Gilroy found "a higher prevalence of reported health problems in GWVs as compared with controls, even after adjusting for relevant confounding factors."[47] Although the possibility of error discussed above still had to be taken into account, in many areas those who served in Operation Friction reported symptoms at a significantly higher rate than did those who had served in other theatres at the time. They included prescription drug use, respiratory diseases, especially asthma, cognitive dysfunction, chronic fatigue, major depression, chronic dysphoria (general malaise, the opposite of euphoria), and multiple chemical sensitivity,[48] though the very existence of the latter as a legitimate diagnosis remains controversial to this day. Such findings may have been more indicative than definitive, but such is the norm rather than the exception in medical science. Although DND therefore opted to continue treating symptoms, it did "not necessarily link the illness to the Gulf War."[49] Those forced to leave the Armed Forces because of disability qualified for 75 per cent of their salaries "if totally disabled," and could seek treatment under provincial health insurance schemes.[50] Also, according to Colonel Ken Scott, "Gulf War veterans received disability pensions if a temporal relationship could be demonstrated between their medical diagnosis and service in the Gulf. Causality did not have to be demonstrated."[51] Furthermore, in October 1998 the Canadian Forces entered into a memorandum of understanding with the Department of Veterans' Affairs to ensure former members of the services could continue to see specialists after their release or retirement.[52] That instrument "allowed us to see Canadian Forces veterans (retired) from *any* deployment, including Korea. We did this because we believed the illnesses we were seeing in Gulf War veterans were identical to veterans of every Canadian deployment and we wanted to offer our expertise to help diagnose and manage these veterans."[53]

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[43] Interview with Colonel Ken Scott, 25 Sep 02.

[44] K.C. Scott to Bill Rawling, 20 Mar 03.

[45] Goss Gilroy Inc, *Health Study of Canadian Forces Personnel Involved in the 1991 Conflict in the Persian Gulf* (Ottawa, 20 Apr 88), 1.

[46] Goss Gilroy Inc, 28.

[47] Goss Gilroy Inc, 7.

Operation Friction was far from the first time conflict was followed by illness that was difficult to define. After the US Civil War, for example, J.M. DaCosta diagnosed a syndrome he called irritable heart, characterized by shortness of breath, palpitations, and sharp or burning pains particularly during exertion, as well as headache, diarrhea, dizziness, and disturbed sleep. There was no apparent lesion or underlying disease.[54] In examining the British military experience, one group of researchers identified some form of post-combat syndrome following the Crimean War, the Boer War, both world wars, the Korean War, and the Malayan emergency as well as the Gulf War. Research into personal medical files revealed symptoms falling into three categories: "a debility syndrome but without psychological or cognitive symptoms," "a somatic syndrome focussed on the heart," and "a neuropsychiatric syndrome with a range of associated somatic symptoms," somatic meaning that they

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48. Goss Gilroy Inc, 33, 40, 43, 44, 46, 48.
49. Department of National Defence, *Current Status of Gulf War Veterans*, June 1998, BG-98.030.
50. Interview with Colonel Ken Scott, 25 Sep 02.
51. K.C. Scott to Bill Rawling, 20 Mar 0.3.
52. Interview with Colonel Ken Scott, 25 Sep 02.
53. K.C. Scott to Bill Rawling, 20 Mar 03.
54. Kenneth C. Hyams et al, "War Syndromes and their Evaluation: From the US Civil War to the Persian Gulf War," *Annals of Internal Medicine* (No 125, 1996), 398.

were physical in nature. What distinguished one from the others was not so much the type of illness, however, but the views of medical science at the time. Therefore, "we propose that what has changed is not the symptoms themselves but the way in which they have been reported by veterans and interpreted by doctors."[55] The phenomenon did not end with the Gulf War, as "there have been questions about the causes of debilitating symptoms among veterans of more recent deployments. Unique deployment-related illnesses have been postulated, including a Balkan syndrome, a Cambodia syndrome, and a Chechnya syndrome." The conclusion was clear, and

> Consequently, questions about unique "war syndromes" should be anticipated after any dangerous combat or peacekeeping mission. The repeated occurrence of difficult-to-explain symptoms among military personnel indicates that these health problems are an inherent aspect of hazardous deployments.[56]

Why should this be so? A Board of Inquiry into Canadians' possible exposure to environmental contaminants in Croatia noted that confrontation and controversy actually increased the number of claims of Gulf War illness: "It is very difficult to investigate the health effects of environmental exposure after the issue has received wide media attention," the Board concluded. "The Gulf War studies became biassed as people developed and recalled non-specific symptoms in response to suggestions of illness. Experts told the Board that incidents of illness by suggestion are far from unusual."[57] Looked at another way, news stories and documentaries awakened Canadian Forces' personnel and veterans to the possibility that any symptoms they might be suffering, if they originated at the time of or after the war against Iraq, might be attributable to that conflict. Furthermore, veterans were bombarded with stress for years after their return home, with stories of illness due to exposure to depleted uranium, or to nerve gas released when an Iraqi bunker was destroyed, or to insecticides, or to smoke from oil fires, or to anthrax vaccine, succeeding one another in a staccato that may indeed have robbed service people—and their families—of sleep and well being. As one Canadian Forces medical practitioner has suggested, worry, which as we all know is accompanied by very real physical symptoms, can begin from the moment an individual is told he or she will be deployed, and can continue during operations due to separation from family, family conflict going unresolved through absence, marriage or relationship breakdown, or any other bad news from home. Adding years of warnings about one health risk after another could not but increase the burden, in some individuals to the point of causing disability.[58]

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[55] Edgar Jones et al, "Post-combat Syndromes from the Boer War to the Gulf War: A Cluster Analysis of their Nature and Attribution," *British Medical Journal* (9 Feb 02).

[56] Kenneth C. Hyams et al, "Protecting the Health of United States Military Forces in Afghanistan: Applying Lessons Learned since the Gulf War," *Clinical Infectious Diseases* (No 34, 2002), S212.

[57] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 42.

As for the operational units of the CFMS, it remained to be seen whether other lessons of the Gulf War would be put into practice as they returned to peacetime routine, the latter including a return to the Rendez-Vous series of exercises. One of them was the (again) renamed 1 Canadian Field Hospital, which, for example,

> was tasked to provide third line medical support to 1 Canadian Division for RV 92 in Wainwright Alberta. The unit cadre developed the hospital structure necessary to fulfil its task and they prepared the unit for deployment. To provide third line medical coverage to the 12,000 plus troops of the division necessitated the callout of augmentees. The unit grew from its cadre of 39 to an exercise establishment of 153 all ranks. With the rotation of specialists and selected other individuals, there were 168 people attached to the unit during RV 92,

hence applying a lesson we saw being learned on RV 85.

> The exercise took place from 14 April to 10 June with the hospital opening stations on 1 May. The hospital provided no duff coverage throughout the concentration and in total saw 1034 out-patients, filled 2160 prescriptions, had 710 physiotherapy visits, took 591 x-rays and made 1318 lab tests of various types.

There was no shortage of work, especially given that augmentees joined the unit only for the exercise proper, so that "It is important to note that all pre and post exercise drills for the entire hospital were performed by the cadre. This included the majority of the uploading, the move of the unit to and from Wainwright and the setup and teardown of the facility."[59] On this occasion, at least, it does not seem to have been too much of a burden.

Nor was support to peacekeeping operations, and the same year it deployed for RV 92 the Field Hospital became "heavily involved in preparing medical equipment to support Canadian units in the former Yugoslavia and in Somalia." Of these assignments, "The first tasking was to provide equipment for Op Cordon, later renamed Op Deliverance, in support of The Canadian Airborne Regiment. They received an Advanced Surgical Centre consisting of an operating room, a field laboratory, a field x-ray and a 10-bed ward." In addition they were issued the necessary kit as determined by Canadian Forces Field Equipment

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[58] Interview with Colonel Ken Scott, 25 Sep 02.

[59] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 31 Mar 93.

Tables and "conducted familiarization training for the operating room team on the field medical equipment being sent to Somalia." The work soon had to be repeated:

> On 22 Sep the unit was tasked to provide an identical facility in support of the Second Battalion The Royal Canadian Regiment. As with any major operation the plan is always subject to amendment. The Commanding Officer 1 Cdn Fd Hosp was tasked to conduct the medical recce for the deployment. There were several possible options to consider, however, in the end the only change to the medical facility was the addition of 10 ward beds.

The Field Hospital did not, however, provide personnel for either operation, and "The unit took a dim view of this and, after discussion, two Med As were sent on Op Cavalier,"[60] in the former Yugoslavia.

The Field Hospital was not the only medical unit providing support for overseas operations, and in 1992 2 Field Ambulance found four different tasks worthy of note, the first being Operation Record in Kuwait, where the unit provided predeployment first aid and CPR training to two separate 45-member contingents preparing for deployment to the Canadian Contingent United Nations Iraq/Kuwait Observer Mission (or CCUNIKOM). The unit also provided two Medical Assistants, Warrant Officer G.E. Whelan and Master Corporal C.T. Moffat, for a tour with CCUNIKOM from 1 April to 3 July. Next was Operation Harmony in the former Yugoslavia, where 2 Field Ambulance was tasked to support the Canadian Contingent United Nations Protection Force in Croatia with a Master Warrant Officer and a Sergeant Medical Assistant from July to October: "MWO J.G. Jerome was assigned to 3 R22eR and Sgt G.E. Hanson was assigned to 4 CER," or the Royal 22e Régiment and 4 Combat Engineer Regiment respectively. Another task was Operation Marquis in Cambodia, for which 2 Field Ambulance provided predeployment first aid and CPR training to a 200-member unit preparing for deployment to the Canadian Contingent United Nations Transitional Authority for Cambodia; the unit was also tasked to provide two Medical Assistants, Petty Officer 1 W.M. Hyatt and Corporal B.P.J. Michaud, for a tour in Cambodia beginning 24 October.[61]

The final task of note in 1992 was Operation Deliverance, the mission to Somalia, in which "2 Field Ambulance was tasked to provide 20 personnel ... to the Canadian Airborne Regiment (CAR) beginning in Oct 92, to undergo training in preparation for deployment to Somalia... Throughout the predeployment phase of the operation 2

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[60] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 31 Mar 93.

[61] DHH, Annual Historical Reports, 2104, For Year 1992.

Health Care within UNTAC, 1992. Canadian Forces Joint Imagery Centre, ISC 92-1121

Field Ambulance also provided personnel to fully man the CAR Unit Medical Station, thereby freeing up CAR medical personnel to undergo their own training."[62] The unit never commented on the appropriateness of detaching individuals and small groups for operations overseas, though it should be noted here that the role of a field ambulance originally had been to work as a cohesive whole in support of a combat arms formation. Regardless, such deployments continued in the years that followed, with medical assistants and others being sent to Cambodia, Somalia, and the former Yugoslavia in 1993, Rwanda and the former Yugoslavia in 1994, and so on. In fact, there were three different missions in the latter, Operation Cavalier, Operation Harmony, and Operation Mandarin.[63]

Of these, 1 Field Ambulance reported that

> Without question the most significant events in 1992 were the deployment of fifteen Medical Assistants from 1 Field Ambulance to the United Nations Peacekeeping Operations—Operation Harmony in the former Yugoslavia. These personnel provided medical support to the 3rd Princess Patricia Canadian Light Infantry Battalion, 1 Combat Engineer Regiment, and the Canadian Contingent Support Group, National Medical Liaison Team. The field operating skills of our personnel were critical to the success of the operation. This underscores the absolute necessity of maintaining a cadre of personnel who have both medical skills and field operations training.

Like 1991, 1992 proved to be "one of the most significant years in the recent history of 1 Field Ambulance,"[64] but by 1994 the mood was more subdued, the unit simply relating that "In January, forty-four unit

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[62] DHH, Annual Historical Reports, 2104, For Year 1992.
[63] DHH, Annual Historical Reports, 2104, For Year 1993, 1994.
[64] DHH, Annual Historical Reports, 2103, For Year 1992.

Treating a Bosnian farmer, 1992. Canadian Forces Joint Imagery Centre, ISC 92-6027

members were attached to other Brigade units for pre-United Nations training for a three month period. They then deployed for six months on three different operations." In summer, the field ambulance focussed on various taskings in Western Canada; then, "In late July, a treatment platoon was quickly assembled and deployed to Rwanda on a humanitarian mission,"[65] following a genocidal rampage in that country. Next year, the unit's commanding officer, Lieutenant-Colonel M.F. Kavanagh, reported that "The most significant event in 1995 was the preparation and training of 1 Field Ambulance personnel for four different United Nation[s] operations. Training for Op Cavalier, Op Harmony, Op Mandarin and Op Cobra, respectively, provided an excellent opportunity for personnel to practice their operational skills. Although all but Op Mandarin were cancelled, the predeployment training was not in vain as all personnel gained extensively in medical and soldiering skills."[66]

Overseas operations in the 1990s were thus far more numerous than they had been in previous decades—they were also far more hazardous, including a full-fledged battle in the Medac Pocket of Croatia in 1993. An excellent example of the risks involved in some of these deployments is evident in the experience of Master Seaman Montgomery Penney, serving with 1 Battalion Royal 22e Régiment, in Sarajevo, in the spring of 1992. According to a citation archived for the Governor-General of Canada,

> Working under extremely hazardous conditions over a period of seventy-two hours commencing on May 14, 1992, MS Penney provided vital medical care to three wounded individuals in Sarajevo, Bosnia-

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65. DHH, Annual Historical Reports, 2103, For Year 1994
66. DHH, Annual Historical Reports, 2103, For Year 1995

> Herzegovina. Although their refuge was under intense artillery fire, he stabilized the condition of a wounded soldier and a badly injured man. At one point, MS Penney left the building and, despite continued shelling, raced fifty metres to rescue a victim of sniper fire, carried him back to the building and attended to his injuries."

He was awarded the Medal of Bravery.

Similarly, according to the CFMS history and heritage manual, and as verified by an eyewitness,

> In January 1995, fierce fighting between the Muslim, Serb and Croatian residents of Gorazde, a town in eastern Bosnia, put the community's most vulnerable members at great risk. On 31 January 1995, medical personnel of the Canadian and Norwegian contingents of the United Nations Protection Force (UNPROFOR) organized a convoy of 18 armoured ambulances to bring the sick, injured and frail elderly of Gorazde to safety.

The convoy formed up in Sarajevo, and,

> between noon and midnight, made the 90-km journey to and from Gorazde by way of Pale and Rogatica, a route chosen to avoid contested areas. In Gorazde, where they arrived at last light, the ambulances collected 138 Muslim, Serb and Croat civilians representing the full spectrum of severe health problems from extreme old age and terminal cancer to recent gunshot wounds. The journey was painfully slow and very dangerous; a blinding snowstorm was blowing, the verges of the roads were sown with mines and screened to facilitate sniping, and the convoy was halted at least six times for "positive identification checks" at roadblocks manned by heavily armed soldiers hostile to at least some of the patients. At midnight, the convoy arrived safely at the Sarajevo hospital with all its patients in stable condition.[67]

Canadian medical practitioners had not faced such stressful conditions while evacuating patients since the Korean War.

Another example of the challenges overseas operations could present was the above-mentioned mission to Somalia in 1992 and 1993, called Operation Deliverance. Although it became prominent in the public eye because of the murder of a Somali teenager by Canadian troops, it is the more routine medical aspects of the operation that are of greater interest to this particular study. It is also exemplary in that, unlike deployments to Ghana, Tanzania, Peru, Italy, St Vincent, and other regions in previous decades, the troops sent to Somalia were not engaged in humanitarian relief operations, but involved in a military deployment of which aid was merely a component. Orders were that "the Canadian Joint Forces Somalia will provide, as part of the multinational United Task

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[67] *Canadian Forces Medical Service: Introduction to Its History and Heritage* (Ottawa, 2002), 66.

Force, the secure environment for the distribution of relief supplies in Somalia," the word "secure" explicitly referring to the use of armed force. HMCS *Preserver*, for example, a 20,000-ton replenishment vessel with, among other things, the capability to perform surgery, not only used its helicopters to evacuate victims of snake bite, vehicle accidents, and gunshot wounds, but on one occasion to prevent a Red Cross coastal vessel from being attacked by Somali clansmen. Furthermore, medical and health operations were provided further depth by the presence of engineering teams who could, in one instance, install generators, air conditioners, X-ray facilities, and various surgical equipment in the Medina hospital in the south end of Mogadishu. As in Ghana and Tanzania decades before, there was a missionary aspect to the provision of health care, although at the tactical rather than the strategic level. As Colonel J.L. Labbé, the Canadian contingent's commander, explained, in order to establish the "secure environment" called for in his orders, "first we had to earn the trust and confidence of the local population and their leaders." One means of achieving this was by having a large proportion of the 50 medical practitioners of the Canadian Airborne Regiment performing several days of volunteer work every week in the hospital at Belet Uen.[68]

Some of the lessons of previous deployments needed to be relearned, however, and the rations the Canadians had brought were not always appropriate in an Islamic society. According to one of the medical practitioners deployed to Somalia, "Food for all people in the camp took the form of IMPs or hard rations 'boil in a bag.' The Somalis ate what we did but we had to be careful about anything with pork products. Ever think how many I(ndividual) M(eal) P(ackage)s have possible pork products in them?—wieners and beans, sausage and hash browns, ham omelette."[69] In regards to rations, at least, Canada was still focussed on NATO and western Europe rather than on other organizations working in other parts of the world.

To the mundane could be added hazards that had been unheard of in previous missions, Canadians operating in the midst of clan warfare where almost everyone was under arms, something Corporal Mario Charette could certainly attest to: "A medical assistant with the Canadian Airborne Regiment in Somalia, Cpl Charette defused a violent demonstration of armed townspeople at the entrance to the Belet-[U]en Hospital on February 17, 1993," a citation for a decoration later stated. While surgeons were operating inside the building,

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[68] *In the Line of Duty* (Ottawa: National Defence, 1994), 60, 104, 115, 266.
[69] E.A. Landells, 526, 528.

> Cpl Charette was working alone when a crowd advanced towards the gates of the hospital. Shots were fired and a grenade exploded while Cpl Charette called for back-up. Despite the growing chaos, Cpl Charette continued to transmit situation reports while he screened and disarmed the demonstrators. His efforts prevented further destruction of the hospital and the possible deaths of many people.

He received the Medal of Bravery in June, 1994.

Op Deliverance was one deployment among many in the 1990s, medical units routinely continuing to detach personnel and materiel to overseas operations, among them 1 Canadian Field Hospital. In December 1993, for example, the unit was tasked to provide the medical and other equipment necessary to establish an advanced surgical centre to support a canadian battle group (or Canbat) of about battalion size on Operation Harmony in Croatia:

> The surgical team reported to CFB Petawawa for pre-deployment training with The Royal Canadian Regiment Battle School on 12 December. Familiarization training on the medical equipment was conducted on 14 December. All equipment and personnel were deployed before 30 December and the facility was fully operational by 4 January. The equipment for the two Canadian surgical facilities in the former Yugoslavia was provided by 1 Canadian Field Hospital.

Further, a medical assistant deployed with the surgical team for the first rotation and a specialist technician spent 30 days working on the facility's electrical setup. By March 1994 the unit's cadre had provided five medical assistants, an EGS, or electrical generating systems technician, and a vehicle technician to support operations in the Balkans.[70]

If anything, 1994 was even busier, so that "Support to Operations with personnel and equipment limited unit training to one deployment," when in April/May the Field Hospital was part of an exercise in Gagetown. Support to operations included an intensive care unit and a resuscitation bay for Operation Lance, in Rwanda, and augmentation to 2 Field Ambulance for Operation Passage, a "no notice" deployment to that same country:

> Equipment provided included all power generation and distribution, facility lighting and a materials technician workshop. Five personnel, one Health Care Administrator, one Nurse, two Medical Assistants and an Electrician, deployed with the Field Ambulance for this valuable humanitarian mission.

Also, since deployments to the former Yugoslavia were still a going concern, the commanding officer and company sergeant major of the Treatment Company "deployed to Bosnia to identify key medical equipment to be returned to Canada for maintenance. The equipment was redeployed to Bosnia when the ASC(-) was reactivated for the fall rotation."[71] The ASC(-) was the advanced surgical centre, the minus sign noting that it was a scaled-down version.

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[70] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 16 Mar 94.

The need to provide such facilities, especially an advanced surgical centre, came to the fore during an investigation into Canada's contribution to peacekeeping operations in Croatia. First embodied to look into the possibility that soldiers on Operation Harmony had been exposed to environmental contaminants, in fact the investigation had a wide mandate, and one of its conclusions was that "Canadian peacekeepers operated without adequate clean water, defensive stores, personal protective equipment and advanced surgical support." The latter is of special interest to this study, for though the CFMS supported Canadian troops in the former Yugoslavia with a scaled-down advanced surgical centre, this was withdrawn for a time in 1994. Its absence was cause for no little worry, the Board noting that "Commanding Officers and Medical Officers testified about the lack of surgical support in theatre." When it was withdrawn, "casualties had to be transported a considerable distance by ground. As a result, it was unlikely that Canadian casualties would receive advanced surgical care within the hour. Combined with the stress of working in a high-risk environment, which included demining operations and being shelled, this situation was a cause of great concern,"[72] perhaps something of an understatement.

A further conclusion followed logically:

> In a high-risk operational environment, it is essential that advanced surgical services be readily available. The equipment and training of a general duty medical officer are not adequate to sustain life indefinitely in cases of severe injury with significant blood loss. Soldiers, medical staff and Commanding Officers were greatly concerned about the lack of an advanced surgical team in the area of operation. Although adequate facilities existed in Knin, air transport was often not available and the lack of snow clearing often prevented land evacuation.[73]

The lack of an advanced surgical centre in the latter part of 1994 was thus not something to be repeated.

Meanwhile, within the Field Hospital, the increased pace of operations was accompanied by changes both physical and doctrinal. In August 1993, for example,

> the unit took possession of a new hospital tentage system consisting of inflatable tents, air conditioners, heaters, generators and other equipment

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[71] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 27 Apr 95.
[72] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 36-37.
[73] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 36-37.

> to enhance the unit[']s ability to perform field surgery. The new system will allow the unit to create a sterile work place even in a contaminated environment. The system was purchased from Scanvent Ltd, a subsidiary of Trelleborg Industri AB of Sweden.[74]

The following year, "The unit saw its old and tired fleet of 5/4 Ton Trucks replaced with the new LSVW," or Light Support Vehicle Wheeled, while "The medical capability of the unit was enhanced with the acquisition of approximately $300K of medical equipment. There are six fully operational ICU and four resuscitation bays positioned in Petawawa. In total, including deployed equipment, the unit has 11 ICU and 9 resuscitation bays,"[75] the latter for treating shock caused by blood loss.

Another aspect of the unit's continuing evolution was noted in April 1997, when it reported that "Over the last year the Canadian Forces Medical Service (CFMS) has continued its transition from the provision of peacetime, day-to-day, garrison health care toward providing medical support to operations." Also, it implemented "the Chief of Health Services (CHS) Business Plan," including the provision of training for detachments of the Canadian Forces Medical Group (CFMG).[76] The latter had been formed in 1994 as the organizational and operational branch of the Canadian Forces Medical Service, which became a less formal institution along the lines of a regiment or corps, and that some of CFMG's elements were undergoing training was all to the good.

As usual, however, there was always room for cautionary notes, and in 1999, 1 Canadian Field Hospital noted that it was also continually called upon to warehouse and maintain equipment without the same opportunities as other organizations to deploy as a whole unit: "This has, and will continue to have, a major negative impact on morale. In an attempt to compensate for this, two initiatives have been implemented." First, the unit's commanding officer successfully lobbied headquarters to ensure that members of the Field Hospital would have opportunities to deploy whenever an operation required Role 3 (or 3rd Line) medical support. Second,

> the Fd Hosp has focussed on its own training with augmentation of personnel... This has enabled the unit to exercise garrison personnel and equipment to a greater degree, as well as trialing new field and medical equipment. These initiatives have not only contributed to an improved morale within the unit, but have also increased Fd Hosp personnel's knowledge base of deployed requirements which, in turn, has been used

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[74] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 16 Mar 94
[75] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 27 Apr 95.
[76] DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 4 Apr 97.

> to improve pre-deployment training of the unit and CFMG personnel. As well, increased training in the field has highlighted equipment problems associated with a field milieu and has stimulated initiatives to improve the "way of doing business" in a field environment.

That same year new plans were initiated with the aim "to re-organize and equip the Fd Hosp into a 100-bed main facility with two integral ASCs and an ASC dedicated to the Immediate Reaction Force (Land) in support of Operations Other Than War."[77] The unit's experiences would thus continue to be characterized more by change than by stasis.

The unit, as well as the medical service generally, would have to keep up with the state of the art in the provision of care, and perhaps the greatest continuing challenge facing practitioners was the human mind. As we have seen, psychological injuries and illnesses had proved to be among the most difficult to cope with, and the situation had not changed markedly since 1945. That there was a hierarchy of wounding was no help to the psychologist; in the First World War a soldier who suffered a mental breakdown following a shell explosion was considered to be wounded, and hence eligible to wear a wound stripe on his uniform, but was not allowed to do so if psychological illness had not immediately followed such an explosion.[78] Similarly, at the time of writing this narrative, policy within the Canadian Armed Forces allowed military personnel to wear wound stripes, if they so chose, only if physically injured by a weapon while on operations; those who required bowel resections due to severe infection—or those who developed mental illness—could not. If not dishonourable, psychological injury was still considered less worthy of recognition.

Still, the same Board of Inquiry that decided Canadian soldiers on operations needed adequate surgical care also concluded that stress could well be a factor affecting their health. As historian Allan English had noted, there was nothing new in such a conclusion, as

> The modern Israeli experience mirrors the experience of the Allies in the Second World War. During the catastrophic early days of the Yom Kippur War in October 1973, the Israeli Defence Forces (IDF) reported that CSR [combat stress reaction] casualties comprised 60 percent of total casualties. As Israeli forces regained the upper hand in the conflict, CSR casualties fell to 30 percent of total casualties. During the 1982 Lebanon conflict, early Israeli successes and a conviction that their cause was just meant the the IDF suffered very few CSR casualties. As the IDF's advance became bogged down, and doubts were expressed about the righteous-

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77. DHH 1326-2112, 1 Canadian Field Hospital Annual Historical Report, 27 Jul 99.
78. Ben Shephard, 29.

> ness of the Israeli action, CSR casualties of 23 percent of total casualties were reported.[79]

Reference to previous wars was significant, and the Board later concluded that

> The nature of peace support has changed since it began as a distinct military activity shortly after the end of the Second World War. In the Cold War era, the "classic" peacekeeping mission placed a neutral force between two potential or former belligerents. Generally, a cease-fire preceded the deployment.

After the collapse of the Warsaw Pact, however, "the concept of peacekeeping expanded to include peace-restoring and humanitarian aid operations," such as Operation Harmony. In Croatia, however, "Long-held military assumptions quickly became irrelevant as mission conditions changed... Many of the soldiers who served in Croatia were experienced peacekeepers. Yet few, if any, had faced conditions elsewhere that compared to Sector South," the central part of the coastal area of Croatia. In fact, the Board noted,

> Veterans of Op Harmony experienced a pace and intensity of operations unknown to Canadian soldiers since the Korean War. Many of them lived under constant combat conditions in Sector South. They were frequently caught in the crossfire between the warring Croats and Serbs. Sometimes, they themselves became targets as one or the other belligerents directed fire on Canadian positions.

Physical danger was not their only trial: "They witnessed terrible atrocities. Nothing in their training could have adequately prepared them psychologically for the sights and hardships they had to endure."[80]

One conclusion was obvious: "It is highly probable" that at least some of the illnesses plaguing veterans of that deployment "result from the very high level of chronic stress experienced during the operation." In fact,

> several soldiers reported being diagnosed with Post Traumatic Stress Disorder or PTSD-like symptoms. The Board also heard from a number of soldiers who are suffering from what appears to be stress-related ailments. The Board has been inexorably drawn to the conclusion that the health problems many have suffered relate to the horrific experiences and conditions experienced in theatre. The Board cannot ignore the link between service in Croatia and the problems we observed. Given the intensity and ferocity of modern conflict, it is essential to recognize and address the effects of exposure to stress.[81]

[79] Allan D. English, "Historical and Contemporary Interpretations of Combat Stress Reaction," *Board of Inquiry Croatia* (DND, 2000), 16.

[80] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 3-4.

[81] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 2-3.

In fact, the Canadian Armed Forces had already set up Operational Trauma and Stress Support Centres (OTSSCs) in Esquimalt, Edmonton, Ottawa, Valcartier, and Halifax in 1999.[82] Nor were Canadians alone in recognizing the effects of stress on peacekeeping operations, a 1998 study by Wendy Holden noting that British forces

> are now facing the tough new demands and unique pressures of their role in the United Nations peacekeeping force, sent to places like Bosnia and Somalia, countries ravaged by centuries-old conflict or famine, where they are under attack but helpless to fight back or to defend properly those they have been sent to save. A good war from a psychiatric point of view is short, has a well-defined enemy, clear objectives and expectations of the servicemen. Peacekeeping is often the antithesis of that: men often have to witness atrocities and are powerless to intervene.

For some, the burden was unbearable: "When presented with the unimaginable, they crack."[83]

In regards to treatment, English explained in his submission to the Board how one Israeli expert, Shabtai Noy, suggested "return to the unit as the essence of an "active coping" CSR treatment regime. This allows the victims to see the manifestations of their trauma as a temporary and normal reaction to an extreme situation." Noy cautioned that "perceiving post-traumatic reaction as a disease increases the likelihood of soldiers viewing themselves as continuously traumatized or helpless, and this may lead to chronic PTSD," or Post-Traumatic Stress Disorder. Furthermore, he suggested that "abreaction (when the victim re-experiences the trauma in dreams, thoughts, images and sensations) is a natural response to the trauma, part of the healing process, and should be encouraged." Noy further commended

> that the forward treatment regime now espoused doctrinally by most western armed forces focusses on getting the soldier to function and back to his or her unit again in as short a period of time as possible. This treatment regime assumes that abreaction and social support will be given at the unit level once the soldier returns to duty.[84]

In conclusion, the Israeli doctor emphasized

> that prevention of CSR by selection is generally unsuccessful because no single factor distinguishes a potential CSR casualty from those who do not become casualties and that stress inoculation has limited effectiveness. He reminds us that strength of leadership and unit cohesion are the only factors with "demonstrated merit" in reducing CSR casualties.[85]

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82. Canada, Department of National Defence, CANFORGEN 003/02, 25 Jan 02.
83. Wendy Holden, *Shell Shock* (London, 1998), 171.
84. Allan D. English, "Historical and Contemporary Interpretations of Combat Stress Reaction," *Board of Inquiry Croatia* (DND, 2000).
85. Allan D. English, "Historical and Contemporary Interpretations of Combat Stress Reaction," *Board of Inquiry Croatia* (DND, 2000).

It should be noted here that during the Second World War the Canadian army set up Special Employment Companies in Italy so soldiers suffering from battle exhaustion would not have their symptoms turned chronic through evacuation, so the concept of treatment near the front was nothing new. It was, however, a lesson being relearned in the 1990s as Canadian soldiers became involved in ever more intense operations.

Soldiers in the field, however, including medical practitioners, do not always have the luxury of awaiting the outcomes of boards of inquiry before applying their skills. So, while experts testified and the Board of Inquiry Croatia prepared its recommendations, the Canadian Forces Medical Service continued to carry out its operational mandate. Doing so required thousands of people; in a presentation to the Nursing Sisters' Association, Colonel Marielle Gagné noted that the Canadian Forces, with a strength of less than 75,000 in the regular force and about 34,500 reservists, incorporated 2,728 members of the CF Medical Service, 1,043 officers and 1,685 non-commissioned members. Of the officers, 348 were medical officers, 370 were nursing officers, 143 were health care administrators, and the remaining 185 were pharmacists, physiotherapists, social workers, and medical associate officers (in such specialties as laboratory work, radiology, biosciences, and preventive medicine). Of the non-commissioned members, 1,375 were medical assistants, while 310 specialized in operating room, laboratory, X-ray, preventive medicine, or aeromedical work.[86]

In addition to personnel, there was the matter of supply to be addressed, and the Central Medical Equipment Depot, for example, reported that 1991 "was by far the busiest period in the history of CMED with regard to materiel procured, assembled and shipped to different operations. Furthermore, for the first time in its history, four members of our personnel were involved in a war effort," namely Operation Friction. Medical supplies were provided for Canadian forces around the globe, such as Operation Record in Kuwait, Operation Assist on the border between Turkey and Iraq, Operation Pastel in Angola, Operation Noble Lion (an exercise) in Gagetown, Operation Bolster in the former Yugoslavia, Operation Preserver in Djibouti, Operation Phyton in the Western Sahara, Operation Hugo in the Caribbean, and Operation Forum in Iraq. For Operation Marquis, in Cambodia, the depot provided vaccines and insect repellant, among other supplies.[87]

Another year brought another deployment abroad of Central Medical Equipment Depot personnel, this time on Operation Cavalier in the former Yugoslavia, three members of the unit forming a PMED (most

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86. Col Marielle Gagné, Address to Nursing Sisters Association, 10 Jun 94, in F.A. Landells, 538.
87. DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 25 Mar 92.

likely a Principal Medical Equipment Depot, though the acronym usually refers to preventive medicine): "Once again, CMED was exceptionally busy throughout the year with its involvement in the operational deployment of medical supplies to support UN Operations,"[88] the unit reported, though it might have dropped the expression "exceptionally". Such a pace of work was no longer exceptional, nor was the focus on supporting operations in the former Yugoslavia; the central depot forwarded supplies to an FMED, or Forward Medical Equipment Depot, which was located in Daruvar, Croatia. It in turn was responsible for ensuring the two CANBATs, or Canadian battle groups, had the medical matériel they needed for their operations. Such support intensified in December 1993 when the already-mentioned Advanced Surgical Centre was deployed to CANBAT 1, and the central depot prepared a laboratory and X-ray kit as well as additional quantities of medical supplies: "The UN has set up a Medical Provisioning Point (MPP); however, the MPP is poorly stocked, it does not stock items which are unique to the CF, and service is extremely slow; therefore, the provision of medical supplies from Canada continues to be an important support activity."[89]

Stockpiling, arranging, and expediting matériel was thus no little challenge. In 1994,

> Weekly shipments of blood continued to be supplied by the Canadian Red Cross in Toronto and shipped by commercial air or service air to Split for redistribution to the two surgical centres at CANBATs I and II. The Advanced Surgical Centre at CANBAT I was temporarily shut down from the period Apr 94 to Dec 95.

(Actually it was closed only to December 1994, but that was still too long a period to suit those on the ground, as we have seen.) While it was shut down,

> Equipment and supplies for this ASC were held in storage at the FMED in Primosten... The FMED continued to have difficulty sourcing Canadian medical supply requirements through the UN Medical Provisioning Point and, at one point, all reimbursement by the UN for medical stores ceased for a two-month period (Jan-Feb 95).

Nor was Canada's international commitment to such operations stable, and while the central depot was sorting out problems in the former Yugoslavia, Operation Passage was initiated:

> Second Field Ambulance deployed to Rwanda on a 60-day humanitarian mission to support refugees. The deployment of this operation presented CMED with two significant challenges; CMED had only one week to prepare stores for this operation and the medical supply requirements

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[88] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 20 Apr 93.
[89] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 22 Jun 94.

> were unique due to the civilian patient population and health problems of refugees. In conjunction with Second Field Ambulance, CMED prepared lists of supplies including large amounts of intravenous solutions, oral rehydration powder, antibiotics, disinfectants and paediatric supplies. The after-action report noted that resupply was problematic and the large quantities of above-mentioned supplies proved to be unnecessary as the patient population was healthier than expected as the other aid organizations had helped the most seriously ill.[90]

In many ways experiences were similar within the Regional Medical Equipment Depots, although in the early 1990s Debert's attention was more focussed on the reorganization of medical service headquarters and subsequent amendments to administrative instructions than on the pace of operations. In April 1991, the Canadian Forces Hospital and Medical Supply System Headquarters instructed Debert to procure supplies locally as much as possible: "Although this has greatly increased the workload of the Procurement Section, it has provided for improved service to our user units,"[91] the RMED reported.

If buying supplies on the local market were not enough to keep the unit's personnel busy,

> A major portion of RMED's warehouse staff efforts were directed in inspecting, investigating, rectifying and alerting other Medical Depots to the serious safety hazards that had been discovered with regard to Emergency Health Services material stored at RMED. The discovery came about during a routine inspection of hazardous chemicals that were awaiting normal destruction, when it was noted that old stockpiles of Ether were leaking. Environment Canada experts alerted us to the serious explosive danger that old Ether provided. This began a long administrative battle to ensure EHS took responsibility for funding the destruction of their material.

The Canadian Forces might warehouse EHS, or Emergency Health Services materiel for Health Canada, but it did not intend to pay for its destruction when it proved dangerous. Ether was not the only storage problem:

> During a routine inspection of EHS Kits being prepared for shipment, it was discovered that many chemical containers were leaking, and that flammable and explosive chemicals were being stored in the same container. All EHS Kits were inspected, and contents were reviewed in relation to the Material Safety Data Sheets on hand. Serious problems were observed, and CFHMSS HQ and other Depots were alerted.[92]

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90. DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 31 May 95.
91. DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 27 Jul 92.
92. DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 27 Jul 92.

In the years that followed, the unit continued to support ships, militia units, and overseas operations. In 1993 "a field X-Ray unit held by CFH Halifax was issued on an urgent basis to Bosnia in support of Op Cavalier after inspection and packing," and "Operating Room equipment and supplies were determined, selected, packed and shipped to HMCS Preserver on short notice in support of Op Sharp Guard," enforcing sanctions against Yugoslavia in the Adriatic; "A Refugee Pack-Up Kit was also assembled and shipped to HMCS Preserver in support of this Operation as well," and "additional medical supplies were sent to HMCS Fraser and Gatineau," in support of their routine operations and training.[93]

Then came Operation Phoenix, a 1995 review of the medical services with an eye to dramatic budget cuts: "This report outlined major initiatives that will impact on the entire spectrum of medical supply within the Canadian Forces." As the Central Medical Equipment Depot related, "Key elements of this plan are the emphasis being placed on operational support and the investigation of Alternate Service Delivery," i.e. civilian contracting, and

> By the end of the calendar year, study was well on the way to determining the most effective method of implementing the medical supply recommendations of Op Phoenix... Re-structuring the depot began in earnest this year with the realization that CAMMS implementation [the installation of Computer Assisted Material Management Software] and fewer personnel in the Forces had significantly reduced depot workload. Consequently, a review of our services was conducted which identified seven civilian positions and sixteen to eighteen military positions as surplus. Formal plans to implement these cuts over the next two years were proposed.

Nine civilians, "some of whom were here when the depot opened in 1961," opted to leave. As for alternate service delivery, "ASD from a medical supply perspective will allow Base Hospitals to procure direct from trade thereby eliminating the requirement to reprovision through CMED. CMED will remain the control point and process but will not necessarily provide unit requirements. As has always been the case, CMED will remain the focal point for support to Operations. The announced closure of CMED Detachments Debert and Calgary," which in the recent past had been Regional Medical Equipment Depots, "have necessitated the identification of an ASD option to provide medical supply services to those regions previously serviced by Debert and Calgary."[94]

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[93] DHH 1326-1211, Regional Medical Equipment Depot Debert, Annual Historical Report, 15 Feb 94.

[94] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 26 Mar 96.

Events moved quickly, and

> CMED initiated plans to utilize a third-party, civilian medical wholesaler for the provision of in-garrison, peacetime medical supply support. In October 1996 Northwest Drug Ltd of Edmonton, Alberta was selected as the Canadian Forces Medical Supply System's "prime vendor." A one-year contract was awarded ... to provide major CF units in the Western and Eastern regions with a selected list of consumable medical supplies.

At the same time,

> CMED was directed to ensure that the often unique medical supply requirements of HMC Ships were given special attention. Thus CMED ... developed plans and began action to establish Medical Provisioning Points (MPPs) at CFB Esquimalt and CFB Halifax. The MPPs are to be manned and fully functional on or about May 1997. At this time all HMC Ship medical supply demands shall be processed and filled by MPP staff. MPP personnel shall utilize ASD, CMED, and LPO [Local Purchase Order] in order to satisfy HMC Ship requirements.[95]

There were still the various Canadian Forces' operations around the world to support, requiring substantial planning and no little amount of forward thinking. If logistics is the art of anticipation, then Contingency Operation Cobra is an excellent example of the application of that principle. As the central depot reported in early 1996,

> The purpose of the plan was to provide medical support and re-supply during the military extrication of UN troops in the Former Republic of Yugoslavia. Although COP Cobra was eventually stood down in November of 1995, CMED prepared fifty-five triwalls of medical supplies and equipment to support this operation.

In addition to the supplies, six members of the Depot underwent Individual Battle Task Standards training at CFB Valcartier from 30 June to 15 July. The supplies, in the end, did not go to waste: "COP Cobra stores were warehoused at CMED and deployed in support of Op Alliance (Bosnia) in late 1995."[96]

Other, similar preparations followed the 1994 Defence White Paper, which mandated a humanitarian role for the Canadian Forces:

> Thus, circa November, 1995, plans were underway to create a Disaster Assistance Response Team (DART) consisting of various support elements including a medical treatment support capability... As the year drew to a close, CMED was heavily involved in the planning stages. Unique requirements such as obstetrics, paediatrics, etc, were determined. Liaison with World Health Organization (WHO) commenced and planning for the

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[95] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 1 Apr 97.

[96] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 26 Mar 96.

> storage and immediate deployment of the anticipated five sea containers worth of medical supplies was well underway.

It should be noted that the world did not stand still, and while the above planning was underway the depot worked in support of Operation Hurricane, where "CMED prepared and maintained a specialty kit to respond to a call for humanitarian aid from countries devastated by severe tropical storms."[97]

Canada, someone could have pointed out, occasionally has severe weather of its own, a fact that came very much to the fore when an ice storm struck parts of Quebec and Ontario. As the depot related,

> In January 1998 severe ice formations resulted in a significant and extensive loss of electricity to thousands of personnel [i.e. civilians] throughout Ontario and Quebec. As part of the relief effort to assist these people, CMED was tasked to prepare, load, and ship large quantities of Health Canada's Emergency Health Stores (EHS) warehoused in our depot. On 8 January alone CMED personnel implemented a large production line to un-crate, palletize, and then load over 3,000 folding beds. This line was set up at 1300 hours and completed its task by 2300 hours. These beds were then shipped out to the required locations with the assistance of 6 full tractor-trailers. During the next few days CMED personnel also provided in excess of 27,000 blankets, thousands of stretchers, and numerous EHS generators. CMED personnel often completed these tasks with little notice and throughout all hours of the days and nights. After the Ice Storm, all EHS supplies were returned to CMED and much effort was required to account for and re-warehouse these stores."[98]

At Central Medical Equipment Depot, then, emergencies, even on a rather large scale, were becoming matters of routine.

The CFMS obviously had its logistical house in order, but when it came to the sharp end of the operational organization, the post-Cold War era, with its inherent uncertainty about what exactly medical practitioners might be called upon to do, required a variety of units to ensure flexibility. Therefore, added to the century-old field ambulance and the decades-in-development field hospital was the above-mentioned Disaster Assistance Response Team, or DART, in the mid-1990s, intended "to conduct international emergency humanitarian assistance operations. The DART is intended to deploy anywhere in the world within 48 hours' of having received an order from the DCDS," or Deputy Chief of the Defence Staff. "The length of deployment is based on a 90 day tour cycle from activation to ... completion." Like the field hospital, the response team would rely on personnel from other units to make up its establishment, 2 Field Ambulance, for example, tasked to provide a platoon-plus (i.e. larger than usual) to the organization.[99]

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[97] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 26 Mar 96.

[98] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 3 May 99.

For supplies, the DART would rely on the Central Medical Equipment Depot; in 1998, for instance, "The 1st seven days of DART medical supplies were maintained [at CMED] with dated items in order to meet a 12-hour notice to move... A second seven days of medical materiel without dated items was also assembled and retained in our warehouse." For example,

> In November 1998, the devastation caused in Central America by Hurricane Mitch resulted in the first deployment of the DART. As part of Op Central, CMED personnel finalized the 1st seven days of DART medical stores and within four hours of receiving the request for this materiel, all stores were strapped to 80 pallets and loaded onto two tractor trailers, ready for shipment to awaiting aircraft at 8 Wing Trenton. Over the next few days CMED also ordered, received, and loaded the time sensitive medical supplies required to complete the DART's 2nd seven days. Once called for, these additional medical supplies were sent to Trenton for immediate forwardance to the DART located in Honduras. During the remainder of Op Central CMED provided numerous IOR [Immediate Operational Requirement] shipments of medical supplies to meet the unique, on-the-ground requirements of the DART Medical Platoon.[100]

When the Disaster Assistance Response Team redeployed over the Christmas period,

> all CMED personnel pitched in to ensure that medical supplies and equipment were on hand to guarantee that a timely reconstitution could be initiated. In addition to the successful group efforts of CMED personnel, it must be noted that MS Johnston, CMED's Repack Supervisor, successfully deployed as Op Central's Primary Medical Storesperson.[101]

Later,

> In August 1999, the DART deployed to Turkey to provide humanitarian assistance to the victims of an earthquake which occurred 17 August 1999. Through the hard work of unit personnel, CMED successfully deployed the 1st seven days supply of medical stores to Trenton to leave on the first flight to Turkey. Immediately thereafter, CMED continued to support the re-supply with every sustainment flight. Op Torrent lasted 38 days, with the main body returning to Canada 28 September 1999.[102]

No doubt the operation would not be the last of its kind.

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[99] DHH, Annual Historical Reports, 2104, For Year 1996.

[100] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 3 May 99.

[101] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 3 May 99.

[102] DHH 1326-1910, Central Medical Equipment Depot, Annual Historical Report, 27 Mar 00.

As for the members of the DART proper, one example of how they operated in the field will suffice here, but is worth describing in some detail. On 3 November 1998, Lieutenant-Colonel Wayne Douglas, the unit's CO, was advised "that an interdepartmental meeting would be held at 1600 hours to discuss the possibility of deploying the DART to somewhere in Central America in response to calls for assistance as a result of damage caused by hurricane Mitch." At 20:00 word came that he would be part of a reconnaissance team led by the Department of Foreign Affairs and International Trade, which would consider the feasibility of deploying the DART to Central America: "I was also advised that the DART recce party should travel prepared to stay in theatre for a normal DART deployment of up to 40 days." At 20:30 a unit fan-out was activated, and it was decided that the reconnaissance element would consist of Douglas, Medical Liaison Officer Captain Cher Austin, Logistics Liaison Officer Captain Derrick Williamson, and Engineer Liaison Officer Captain Steve Day. On 4 November these officers drew their personal weapons, among other preparations, only to be told by NDHQ that though firearms would be carried on the deployment, they would not be allowed on the reconnaissance. On the following day, their aircraft landed in Managua, and on the 10th the first five chalks of the DART arrived, with five more next day, another five on the 12th, total personnel in theatre numbering 286 on the 14th.[103]

Events developed quickly thereafter, and next day the

> First patient was seen by the deployed medical facility, a young woman with a gunshot wound to the hip and the hand. Apparently they were the result of an argument with a neighbour over a chicken. The clinic had not officially opened when she arrived. Opening day is scheduled for tomorrow.

As well, another patient "was brought in from Soto Cano by Griffon [helicopter] and sent out on the airbus with the minister," who was touring the site at the time. The evacuee was in fact a member of the team who, due to illness, "could not remain in theatre because of the poor level of sanitation and the high heat/humidity levels. He requires three weeks sick leave." The next day was busier, as "Medical Assistance operations began in the Aguan Valley. It was a split operation with the main clinic operating at a reduced scale and Joint Medical Teams deploying [to] more remote villages," the teams (called JMTs) made up of Canadian military personnel and anyone else, whether local medical practitioner or member of a non-governmental international organization, with useful skills. "Saw about 100 at the main clinic and twice that in the village... Water distribution also began as did the distribution of humanitarian aid (medical supplies) into the valley."[104]

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[103] DHH, Op Central War Diary, 3914.

By 17 November, the medical facility was becoming considerably busier:

> We toured the Medical Clinic location. It has been set up a half kilometre closer to the village and was open for business. There was a crowd of 50 or 60 at the gate. Intake was on a modified number system. The clients were given a quick triage and any in immediate need were taken straight to the clinic. The rest were provided with numbers and were told to wait until called. A half dozen were moved from outside of gate to a tent waiting area where an interpreter asked basic questions as to their complaint. From there, they went through an initial screening area where medical staff and an interpreter started a patient record and gleaned more information from the patient. From this point, each patient was taken to an examination area where medical assistants and/or nurses got them ready for the doctor. Once the doctor completed his examination and diagnosis, instructions were given and medicine was prescribed. Medicine was provided by the pharmacy. The clinic is looking at about 100 patients a day. These tend to be people from the local communities who bring in chronic illness[,] not those affected by the floods.[105]

To look after the latter's health care, the medical company worked in concert with local medical personnel and others provided by the Standard Foods corporation, which owned large swathes of farmland in the region:

> They deploy medical teams to the outlying villages by either vehicle or truck where they conduct daily clinics. We are also using helos [helicopters] to move Honduran medical teams to remote locations so they can conduct two-day clinics. After two days we pick them up and move them somewhere else. The daily clinics have been handling 300 to 400 personnel,[106]

that is to say, patients.

The organization was thus up and running, but three days later it became clear that the DART was approaching the limits of its capacity:

> Local initiatives may be getting out of hand. We have to be careful what we take on. I called the desk officers in Ottawa to clarify the policy, as the deployment plan is pretty loose. The conversation can be summed up as: The normal DART mandate consists of the provision of water and medical aid. The DART can exploit excess capacity to assist in local improvements and to work through local initiatives. However, it should not take on projects that will require the long-term commitment of

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[104] DHH, Op Central War Diary, 3914.
[105] DHH, Op Central War Diary, 3914.
[106] DHH Op Central War Diary, 3914.

> resources... Local people and NGOs ... will be around long after we leave...

and be in a position to deal with longer-term problems. (The reader will note that there were similar policies in place at the time of Operation Dolomite in Italy.) As well, the DART had yet to receive any medical supplies from Canada beyond its initial allocation.[107] The reason for this is something of a mystery since, as we have seen, the medical equipment depots had been able to package and ship the listed materials. Either the latter were insufficient to the task or, more likely, there was not enough air transport to move the supplies to Honduras. If such was indeed the case, it might be a commentary on the DART's capabilities; through no fault of its own it might have to seriously limit the scope of its operations.

Regardless where the fault might lie, the unit reported potentially negative consequences:

> Honduran and foreign aid workers have all expressed surprise at the small quantity of medicine which DART has contributed to its own operations. There is potential for Canada to be embarrassed by this situation, as supplies have been provided to DART JMTs by NGOs and by Standard Fruit Company of Honduras, the International Hospital for Children and the Robinson Foundation. These organizations are actively seeking sources of medicine for the DART... At the very least, we must bring back up Canadian supplies into theatre before our contribution is compared to that of our benefactors in the media.

The CO suggested, however, that "one might point out to the media and the NGOs that if the DART Coy was not providing the additional medical personnel and the transport to get the JMTs into remote areas, the demand for medicine would not be as high."[108]

Next day, however, despite "concern over the lack of medicines," in general the unit reported that "Operations are now into a routine of the delivery of food aid, employment of JMTs and the standard operation of the medical clinic." When on the 22nd Minister of Defence Art Eggleton toured the facility, "The party was impressed with the medical set up and found it interesting that it had been described by local officials and by NGOs as the best-equipped hospital in Honduras." Mind you, the unit pointed out, "The lab is having difficulty functioning, as most of the equipment does not like the temperature or the humidity." The minister's tour was reported in the unit diary: after viewing the facility," It was then back to the DART camp to pick up the hel[icopter]s for transport to the JMT held at Ceibita. The pilots had difficulty

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107. DHH, Op Central War Diary, 3914.
108. DHH, Op Central War Diary, 3914.

picking the village out from the others in the valley so we managed to overfly a fair amount of the centre part of the A[rea of] O[perational] R[esponsibility]. The scene of devastation is still very impressive. We found Ceibita when I spotted a Tilley hat in the middle of the soccer field," which "was covered with a thin bit of grass but was still very wet and soft. About a hundred people were standing around but stayed back from the hels as they landed. We left the field and walked about 50 metres down a muddy trail to the medical clinic."[109]

The latter

> was set up in front of a "soil" house. This was actually a two family dwelling (one room each with separate entrances). Soil houses are made of a double wall of thin poles spaced a couple of feet apart both horizontally and vertically. The inner space is filled with mud or a combination of mud, dung and straw. The whole thing is then glazed with a smooth coating of clay, similar to stucco. There is no door to cover the entrance and no glazing on the windows. The yard around the houses was covered in damp clay one or two feet deep. The surrounding trees appeared to be in reasonable health. The owner of one house told us that his holding had been four orange orchards; he is now down to two. There is no electricity, no water, and no sanitation of any kind.

To complete the picture, the DART's war diary described how "The flood line was about five feet up the outside wall and it had started to crumble. Apparently, these walls become invested [infested] with insects and rodents that spread disease and infections to the people living inside." The clinic's personnel consisted of "a couple of Canadian doctors, a nurse and an MA with security people, a couple of Honduran doctors and a pharmacy run by a couple of Honduran women. They were set up with a few three-foot tables, some chairs and benches. Patients were interviewed and examined in the open and medicines were provided by the pharmacy. It was primitive but impressive at the same time, especially when you consider the number of people seen (upwards of 200)."[110] It proved to be the peak of the DART's deployment.

For on 26 November the Commanding Officer reported that "The standing clinic is used less and less. It will be closed on 28th and will remain available for emergencies until the 5th. At that point we are looking at tearing most of it down for backloading to Trenton. JMTs will continue to work in the more isolated valley villages and will concentrate on disease prevention/inoculation under the auspices of the Honduran Ministry of Health." In fact, four days later "JMTs were in La Paz and El Olivido to begin immunization process. They noted a substantial improvement in the health of the population, in general," while on 1 December it was reported that "The Medical crisis in the Aguan Valley is passing with each day. The combination of malaria prevention and clean water is having a real, if undramatic, effect in the absence of epidemic disease." The worst was indeed over, and "the critical requirement for the provision of acute care for injured or ill patients no longer exists." Stores would be moved to La Ceiba so they could be distributed by CARE Canada or the Canadian International Development Agency, and on 3 December the DART medical teams indicated there was no further need for the JMTs.[111]

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[109] DHH, Op Central War Diary, 3914.
[110] DHH, Op Central War Diary, 3914.

The next day brought a surprise, however, as the CO received a call from one of his subordinate commanders advising that one of the troops was being transported to La Ceiba. The diagnosis was "a suspected case of Dengue Fever (also known as the bone breaking disease because your bones feel like they are being broken). A decision would be made as to whether or not he would be medically repat[ria]ted on one of the flights arriving tomorrow, once Dr Karen Breek had seen him." Contemplating returning the patient to Canada, the CO noted,

> I was asked to consider the fact that he would lose money for everyday he was out of theatre, he was only a few days short of the qualifying time for his medal and his family (from Petawawa) was in Toronto and would have to be notified and would likely have to get back to Petawawa. (All given as reasons why we should consider keeping him in a hotel here and provide medical treatment as required—as it did not matter whether he was treated here or at home...

The Commanding Officer's response was in keeping with sound health-care practice, where "the decision to repat the individual would be strictly medical and I would not try to influence it. Dr Breek and Cher Austin decided that he would be sent home on the airbus due in tomorrow because it was the last one scheduled for a couple of weeks and would be preferable to a C130," actually the CC130 cargo aircraft.[112]

However, the story continued: by 5 December, the patient had "been sick for about three days. He felt bad on his day off, in La Ceiba but went back to the field. He did not say anything until he was too sick to work. The probable diagnosis was made and an attempt was made to keep in location," no doubt so he could qualify for a deployment medal as well as for extra pay. However, "He could not keep the pain killers or anything else down," and "Dr Breek determined that he was the sickest person she had seen in theatre and she took him to the local contracted hospital for consultation and tests. She confirmed the need

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[111] DHH, Op Central War Diary, 3914.
[112] DHH, Op Central War Diary, 3914.

Deployed: Operation Torrent, in Turkey, 1999. Canadian Forces Joint Imagery Centre: RED 99-299.

to repat the soldier. He had called his wife to tell her what was happening. She will be called once the arrival time in Trenton is known so that she can get there. He will be kept in Trenton for at least the night. Trenton med staff will determine when he can be moved."[113] It proved to be the last crisis the DART would have to deal with on this particular deployment. It returned to Canada soon after.

The organization, training, and deployment of such units as the Field Hospital and the Response Team were and are tinged with no little amount of historical irony. Neither in Korea nor at the height of the Cold War in the 1960s did Canada have the capability of sending a field hospital overseas, and it certainly was unable to deploy units to just about any place in the world within 48 hours. It was only after the fall of the Soviet Union that such organizations were put in place and used, the hospital during the Gulf War and the DART on two humanitarian relief operations in the late 1990s. It is not necessary to search far for an explanation. From 1950 to 1990 Canada's armed services looked to NATO as their doctrinal centre; if called upon to support operations, the medical services expected to do so in northwestern Europe and Norway. In the post-Cold War world, however, the single threat gave way to a variety of challenges, from humanitarian relief operations to all-out war, requiring an operational flexibility the Canadian Forces Medical Service had not seen fit to develop before. The result was a further historical irony; shifting from a general responsibility for the health and welfare of personnel, their families, and others to focussing on the medical and tactical aspects of Canadian military operations, the CFMS faced a challenge no less complex than the one it had expected to meet in an earlier time.

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[113] DHH, Op Central War Diary, 3914.

Epilogue

When this author first embarked on a post-Second World War history of the Canadian Forces Medical Service, colleagues questioned whether there was enough material for such a project, or whether medical practitioners had enough to do in peacetime to warrant telling their story in a book-length narrative. It is hoped that the foregoing study, hundreds of pages in length, has convinced the reader that the nearly six decades since the 1939-45 conflict have indeed been eventful—at least somewhat—from a health-care perspective, and that lessons may be learned from that experience. Rather than begin producing lists of conclusions, however, this author would like to focus on one: like mathematics and logistics, health care is hard; it is extremely complex, which should come as no surprise since its focus is on one of the most complicated systems known, the combination of mind and body.

Adding to the complexity is the fact that during this period the range of responsibilities to fall under military jurisdiction varied through time. In the immediate post-war period, those needing care were in uniform and in relatively small numbers, but the atomic bomb forced policymakers to consider the possibility that patients would, in the main, be civilians in numbers impossible for people on the ground to count. As early as about 1947, therefore, the medical branches could foresee their responsibilities expanding to near-infinity, and the Korean War did nothing to change that state of affairs, although it did lead government to increase defence spending dramatically, so that the period from 1950 to 1962 can be seen as something of a golden age for the armed services generally and the medical branches in particular.

This may have been to the good, since by the outbreak of war in 1950 medical practitioners were already responsible not only for uniformed personnel but for their families as well, and also for some civilians living near military facilities who otherwise would have had no access to medical care. The result was that by the time the Canadian Forces Medical Service was created in 1959, it had become something akin to a provincial health-care system, and that several years before Saskatchewan formed the first such insurance scheme. A deployable field hospital, non-existent within the Royal Canadian Army Medical Corps in Korea, would as a result figure as as a lower priority than treating alcoholism—and under the circumstances it could not have been otherwise.

When in 1962 the Canadian dollar lost 5 per cent of its value (considered a crisis at the time), the golden age ended as government priorities changed. Such issues as health care, education, and the construction of the Trans-Canada Highway figured more prominently during the later Cold War than they ever had before, while National Defence was reduced in relative importance. In 1970, for the first time since 1949, Defence fell from first place for spending, behind old age security, economic development, and public debt charges. The Defence Research Board, which had had equal status with the three fighting services in the 1960s, and which had supported much in the way of medical research, was reduced to the status of a division within a branch at National Defence Headquarters, with a budget to match. At the same time, the brigade group in Germany, which in the mid-1960s was akin to a mini-division, became a token force, no more than a hostage to fate to ensure that Canadians would die in a Soviet invasion and thus ensure Canada would contribute to the fighting that followed.

One should not, however, exaggerate the impact such policies had on the CFMS, since it was in 1969, when other branches and formations were suffering most, that the medical service was authorized to form the field hospital it had lacked since 1945. Also, its responsibility for civilians was reduced as provincial health-care schemes took over their files. Having supported military operations in such widely flung places as Egypt, the Congo, and Indochina in the 1950s and 1960s, the CFMS continued to conduct such missions, including humanitarian relief efforts in places like Italy and St Vincent, in the 1970s and 1980s. Budget cuts notwithstanding, medical practitioners never lacked work.

The years immediately following the breakup of the Soviet Union were something of a low point in the history of the Canadian Forces Medical Service. With a major military threat seemingly out of the way and the country in the midst of recession, soldiers encountered a parsimonious approach to their medical needs similar to that following the First World War. As the Board of Inquiry Croatia reported, "The soldiers of Op Harmony came home at a time when the Canadian military was undergoing major reductions in size and resources. Traditional support structures were not available, or were inadequate or simply unresponsive to the needs of many of these new veterans." Even worse, the Board noted, "We were appalled to hear of the frustrations and humiliating treatment experienced by injured soldiers. Too many of them ran into difficulty trying to get the care, consideration and compensation they deserve," and "The treatment received by many of the injured that came to our attention has been, at best, arbitrary and certainly inadequate. This situation is a disgrace and cannot be allowed to continue. It must be emphasized that these soldiers suffered injuries in the service of their country."[1]

Part of the solution was already in place—the decision to refocus the Service's priorities into supporting deployments at home and overseas, although even then the result was not a reduction in responsibilities but an increase; such operations coming to include humanitarian relief, an entirely new unit, the DART, was formed to take on the necessary tasks.

Other issues were as old as the medical profession in the industrialized world. Confidentiality, for example, continued to engender controversy, as the Board of Inquiry Croatia noted: "Many who are suffering chose not to come forward officially for fear of exposing their health problems and risking release under the "Universality of Service" rule. This rule requires that every member of the Canadian Forces be fit for deployment." The rule created conflicting demands:

> Confusion abounds in the field concerning the roles of the military medical community. Soldiers are unclear whether the purpose of the military medical system is to take care of the soldiers' medical needs or to police the Universality of Service regulations and inform Commanding Officers about problems. This leads to a reluctance to approach the medical service for help. In the end, the fear of the consequences of revealing medical information seriously jeopardizes the trust the soldiers must have in the system.[2]

Distrust was nothing new, British soldiers of the First World War, while undergoing treatment for mental breakdown, being reluctant to speak frankly with psychiatrists for fear of being sent back to France. Therefore, "while flattered by the doctors' attention," soldiers "were suspicious of their motives."[3] The solution may lie in a more statistical method of determining deployability; commanders need to know how many of their personnel, especially how many of their key personnel, are medically available and how many would need to be replaced should the unit be called out on a month's, a week's, or 48 hours' notice. They do not require details as to the medical conditions concerned nor whether they are permanent or temporary; they only need to know whether they need another vehicle technician or three more riflemen before they can deploy at adequate strength.

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1. DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 4.
2. DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 50-51.
3. Ben Shephard, *A War of Nerves: Soldiers and Psychiatrists in the Twentieth Century*, (Cambridge, Mass. 2001), 82.

Somewhat linked to the issue of confidentiality is that of paperwork, for if the CFMS is to focus on supporting operations, how it documents the impact those operations have on Canadian Forces personnel may be of crucial importance. As the Board of Inquiry Croatia related, "Medical personnel routinely record known health risks (e.g. smoking) on patients' charts. However, they do not record details of deployments out of country and traumatic experiences, although these events can lead to unique medical problems, including stress-induced illnesses." The possible dangers were obvious, since "the absence of records could impede treatment at the home unit." Furthermore, the need for detailed written histories is accentuated by the nature of the doctor/patient relationship in a military environment, characterized by a "shortage of physicians, the frequency of both patient and physician postings and the short-term engagement of many physicians."[4]

The above presents only a few examples to illustrate what has been said in the last chapter of this study: focussing on operations does nothing to reduce the complexity of the challenges faced by Canadian military medical practitioners. In a sense, the world is no less harsh a place than in the days of our hunter-gatherer ancestors, and we rely upon our Armed Forces personnel to bring some modicum of stability to that world or to defend us when that instability leads to war, terrorism, or similar acts. If they are to be successful, these soldiers, sailors, and air personnel must be provided with adequate, not minimal, support, including all of the knowledge and expertise that the health services can bring to bear. In the current organization of the Canadian Armed Forces, the office of the Director-General Health Services is part of the branch of the Assistant Deputy Minister, Human Resources (Military); the CFMS needs to ensure that those who serve their country constitute a resource that is not squandered.

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[4] DND, *Final Report, Board of Inquiry Croatia* (Jan 2000), 39, 41.

Appendix A

Comparison of Ranks: Before the Unification of the Armed Forces

(Equivalencies are not exact; each service had its own command traditions)

Army	**Navy**	**Air Force**
General (Gen)	Admiral (Adm)	General (Gen)
Colonel (Col)	Captain (Capt)	Group Captain (G/C)
Lieutenant-Colonel (LCol)	Commander (Cdr)	Wing Commander (W/C)
Major (Maj)	Lieutenant-Commander(LCdr)	Squadron Leader (S/L)
Captain (Capt)	Lieutenant (Lt)	Flying Officer (F/O)
Lieutenant (Lt)	Sub-Lieutenant (S/Lt)	Pilot Officer (P/O)
Warrant Officer I (WO 1)	Chief Petty Officer (CPO)	Warrant Officer (WO)
Warrant Officer II (WO 2)	Chief Petty Officer (CPO)	Warrant Officer II (WO 2)
Staff Sergeant (S/Sgt)	Petty Officer (PO)	Flight Sergeant (F/Sgt)
Sergeant (Sgt)	Petty Officer (PO)	Sergeant (Sgt)
Corporal (Cpl)	Leading Seaman (L/S)	Corporal (Cpl)
Private (Pte)	Able or Ordinary Seaman (AB or OD)	Aircraftman or Leading Aircraftman (AC or LAC)

Note: The army also had Lance-Corporals and Lance-Sergeants, which were appointed positions, abbreviated as L/Cpl and L/Sgt respectively

Select Glossary and List of Abbreviations

45-month plan;	scheme by which medical students had part of their education paid for in return for joining the armed services for a specified period of time
AA;	Anti-Aircraft
AAD;	Anti-Aircraft Detachment
AB;	able seaman
Abalone;	name for humanitarian relief operation on the Island of St Vincent in 1979
A/C;	Air Commodore, in the air force
Accord;	name given to the deployment of a headquarters to Bahrain during the Gulf War of 1991
ADM;	Assistant Deputy Minister
ADMS;	Assistant Director Medical Services, a medical officer usually at formation level
ADS;	Advanced Dressing Station, of a field ambulance
AFCE;	Allied Forces Central Europe, part of NATO
AIDS;	Acquired Immunodeficiency Syndrome
ALP;	Ambulance Loading Point, for operations following a nuclear attack
AOR;	Area of Responsibility
AOR;	Oiler Replenishment Ship
Assist;	name given to humanitarian relief operations in Turkey and Iraq after the Gulf War of 1991
ASC;	Advanced Surgical Centre
ASD;	Alternate Service Delivery, a form of privatization
ATU;	Air Transport Unit
battalion;	infantry or other unit of about 850 troops, broken down into companies and gathered together in brigades
BCG;	Bacille Calmette-Guerien, a vaccine against tuberculosis
BFME;	British Forces Middle East, especially during the Gulf War
BMH;	British Military Hospital
BMS;	Brigade Medical Station
Bolster;	name given to monitoring operations in former Yugoslavia, 1991 to present
Brig;	brigadier
Broadsword;	name given to proposed deployment of a Canadian brigade to the Gulf War of 1991; it was not deployed
CAF;	Canadian Armed Forces
CAM;	Chemical Agent Monitor, to warn of the use of chemical weapons
CAMMS;	Computer Assisted Material Management Software
CANBAT;	Canadian Battle Group, of about battalion size
CANCORTRON;	Canadian Escort Squadron, in the navy
CAORE;	Canadian Army Operational Research Establishment
Capt;	captain
CAR;	Canadian Airborne Regiment

CAST;	Canadian Air-Sea Transportable Combat Group, for operations in Norway
Cavalier;	name given to operations in the former Yugoslavia
CC;	Canadian Contingent, as in CCUNEF
CC 106;	the Yukon, a passenger and cargo aircraft
CC 130;	the Hercules, a cargo aircraft
CC 150;	the Airbus, for cargo or passengers
CCP;	Casualty Collecting Post, or Casualty Clearing Post, a front-line medical facility
CCS;	Casualty Clearing Station, a type of field hospital
CCUNIKOM;	Canadian Contingent United Nations Iraq/Kuwait Observer Mission
CD;	Canadian Forces Decoration, for long service
Cdn Inf Bde;	Canadian Infantry Brigade
Cdr;	commander, in the navy
CE;	Construction Engineer or Construction Engineering
CEF;	Canadian Expeditionary Force, of the First World War
CER;	Combat Engineer Regiment
CF;	Canadian Forces
CF 18;	a jet fighter aircraft
CF 100;	a jet fighter aircraft
CF 104;	the Starfighter, a fighter-interceptor aircraft
CF 105;	the Arrow, an interceptor; it was never deployed
CFB;	Canadian Forces Base, after unification
CFFET;	Canadian Forces Field Equipment Tables
CFH;	Canadian Forces Hospital
CFHE;	Canadian Forces Hospital Europe
CFHK;	Canadian Forces Hospital Kingston
CFMG;	Canadian Forces Medical Group, in effect the operational component of the CFMS after 1994
CFMO;	Canadian Forces Medical Order
CFHMSS;	Canadian Forces Hospital and Medical Supply System, from the 1980s
CFMS;	from 1959, Canadian Forces Medical Services; from 1990s, Canadian Forces Medical Service
CFMSS;	Canadian Forces Medical Services School, in Borden
CFMSTC;	Canadian Forces Medical Services Training Centre, in Borden
CFS;	Canadian Forces Station, after unification
CGS;	Chief of the General Staff, the highest-ranking army officer, before CAF unification
CHEO;	Children's Hospital of Eastern Ontario, in Ottawa
CHS;	Chief of Health Services, within the Canadian Armed Forces
CIA;	Central Intelligence Agency, in the US
CIBG;	Canadian Infantry Brigade Group, predecessor to the CMBG
CIDA;	Canadian International Development Agency

Civil Defence;	in this narrative, usually refers to operations following a nuclear attack
CJS;	Canadian Joint Staff, made up of representatives of all three services, in Washington DC
CLFCSC;	Canadian Land Forces Command and Staff College, for the higher military education of officers
CLFH;	Canadian Light Field Hospital
CMA;	Central Militia Area, with headquarters in Toronto
CMBG;	Canadian Mechanized Brigade Group, successor to the CIBG
CMED;	Central Medical Equipment Depot, in Petawawa
CNP;	Chief of Naval Personnel
CO;	commanding officer
Cobra;	name given to proposed withdrawal operations from the former Yugoslavia
COD;	Carrier-on-Deck aircraft, on an aircraft carrier
Col;	colonel
Comd Surg;	Command Surgeon
Comms;	communications
company;	in the infantry, a sub-unit made up of several platoons, several companies make up a battalion
Comwl Div;	Commonwealth Division, in Korea
COTC;	Canadian Officer Training Corps, a reserve system within universities
CPF;	Canadian Patrol Frigate, the successor to the DDEs
Cpl;	corporal
CPO;	chief petty officer
CRAD;	Chief Research and Development, the smaller successor to the Defence Research Board
CSM;	company sergeant-major
CSR;	Combat Stress Reaction, or psychological injury
CVE;	California Encephalitis Virus, which causes inflamation of the brain
CW;	chemical warfare
CWO;	Chief Warrant Officer, in the Canadian Armed Forces, the successor to Warrant Officer I
DAA;	Divisional Administrative Area
D Adm;	Director of Administration
Danaca;	name for operation to deploy to the Middle East in the early 1970s
DART;	Disaster Assistance Response Team, from the mid-1990s
DCDS;	Deputy Chief of the Defence Staff
DCIEM;	Defence and Civil Institute of Envionmental Medicine, the successor to the Institute of Aviation Medicine
DCO;	Deputy Commanding Officer
DDE;	Destroyer Escort vessel, in the navy, predecessor to the CFP
DDT;	an insecticide
Deliverance;	name given to operations in Somalia, 1990s

Det;	detachment
DGMS;	Director-General Medical Services, the highest-ranking medical officer before the office of Surgeon General was created
Div;	Division or Divisional; a division groups together several brigades
DMA;	Defence Medical Association
DMedSup;	Director of Medical Supply
DND;	Department of National Defence
DNH&W;	Department of National Health and Welfare, later Health Canada
Dolomite;	name for operation to deploy to Italy after the 1976 earthquake
DRB;	Defence Research Board, equal in status to the RCN, RCAF, and Army from the 1940s to the 1960s
DREO;	Defence Research Establishment Ottawa
DRES;	Defence Research Establishment Suffield, in Alberta
DRML;	Defence Research Medical Laboratories
DVA;	Department of Veterans' Affairs
DZ;	drop zone, for airborne operations
EGS;	Electrical Generating Systems Technician
EHS;	Emergency Health Services, for civil defence and similar emergencies
ELM;	Electro-Mechanical Technician
EPW;	Enemy Prisoners of War
ERP;	Emergency Response Plan, within a hospital or on a base
Evac Hosp;	Evacuation Hospital, an American unit
Fd Amb;	Field Ambulance, which transports and treats casualties on the battlefield
Fd Hosp;	Field Hospital
FDL;	Forward Defensive Lines, in effect the front line
FDS;	Field Dressing Station, part of the field ambulance that provides treatment
F/L;	flight lieutenant, in the air force
FLYCO;	Flying Control, in an aircraft carrier
FMC;	Force Mobile Command, the successor to the Canadian Army in Canada
FMED;	Forward Medical Equipment Depot
FMS;	Forward Medical Station, part of the field ambulance, in effect the successor to the ADS
F/O;	flying officer, in the air force
formation;	generic term usually referring to a brigade, division, or corps, hence much larger than a unit
Forum;	name given for operations in Iraq to destroy NBC weapons
FPMO;	Flying Personnel Medical Officer, in the RCAF
Friction;	name given to operations in the Persian Gulf, 1990-91
F/Sgt;	flight sergeant, in the air force
FSH;	Field Surgical Hospital

FST;	Field Surgical Team, usually attached to a field hospital or dressing station
FTX;	Field Training Exercise
G/C;	group captain, in the air force
GD;	general duties
gen;	general
GO;	general order
GOC;	General Officer Commanding, usually referring to a division or area commander in the army
Grn;	Garrison
GSW;	gun shot wound
Guam,	name given to a 1975 Central Medical Equipment Depot exercise
GWV;	Gulf War Veteran
Harmony;	name given to peacekeeping operations in Croatia, 1990s
Herman Nelson;	a heating unit, usually used for keeping large tents warm
HIV;	Human Immunodeficiency Virus, the cause of AIDS
HMCS;	Her Majesty's Canadian Ship
HMS;	Her Majesty's Ship, in the Royal Navy
Holgier Nielson technique;	for reviving a victim of near-drowning
HQ;	headquarters
Hugo;	name given to humanitarian relief operations in the Caribbean in 1989
Hurricane;	name given to humanitarian relief operations following tropical storms in 1996
HVGS;	High Voltage Galvanic Stimulation, used in physiotherapy
HWC;	Health and Welfare Canada, later Health Canada
IAM;	Institute of Aviation Medicine, predecessor to the DCIEM
IBTS;	Individual Battle Task Standards, a means of determining an individual's level of training
i/c;	in command
ICU;	Intensive Care Unit
IDF;	Israeli Defence Forces
IRP;	Individual Ration Pack
IRU;	International Response Unit, short-lived organizatiion similar to the DART, in the 1990s
ISCJT;	Inter-Service Committee on Joint Training
ISMC;	Inter-Service Medical Committee, to discuss medical issues common to all three services
IV or IVP;	Intravenous, usually refers to providing medication or nutrients directly into the bloodstream
JAG;	Judge Advocate General, responsible for the application of military law
JMT;	Joint Medical Team, made up of civilian and military personnel
JSMB;	Joint Services Medical Board, a predecessor organization to the CFMS
KTO;	Kuwait Theatre of Operations

Lance;	name given to operations in Rwanda and Uganda, 1993-94
LB;	Litter Bearer, often from the infantry, to carry casualties
LCdr;	lieutenant-commander, in the navy
LCol;	lieutenant-colonel
L/Cpl;	lance-corporal, in the army
LPN;	Licensed Practical Nurse
LPO;	Local Purchase Order, for acquiring supplies locally
L/Sgt;	lance-sergeant
LSO;	Landing Signals Officer, in an aircraft carrier
LSVW;	Light Support Vehicle Wheeled
Lt or Lieut;	lieutenant
Lt-Col or Lieut-Col or LCol;	lieutenant-colonel
Lt-Gen or LGen;	lieutenant-general
MA or MedA;	Medical Assistant
MAC;	Motorized Ambulance Column, for transporting large numbers of casualties on the lines of communication
Maj;	major
Maj-Gen or MGen;	major-general
Mandarin;	name given to operations in the former Yugoslavia
MAO;	Medical Associate Officer
MARCOM;	Maritime Command
Marquis;	name given to peacekeeping operations in Cambodia, 1992-93
MASH;	Mobile Army Surgical Hospital; an American Field Hospital
Mat;	Matériel
MCpl;	Master Corporal, in the Canadian Armed Forces
MDC;	Mobile Defence Corps, for operations following a nuclear attack
Med;	medical
MERT;	Medical Equipment Repair Technician
MFAU;	Mobile First Aid Unit, for operations following a nuclear attack
MG;	machine gun
MIR;	Medical Inspection Room, usually on a base or other permanent facility
MJTC;	Medical Joint Training Centre, in Toronto
MM;	Order of Military Merit
MMTP;	Military Medical Training Plan, by which officers could undergo medical training and education.
MO;	medical officer, usually within a unit
MOD;	Ministry of Defence, in Britain
MODUK;	Ministry of Defence for the United Kingdom
MOTP;	Medical Officer Training Plan, by which officers in the armed services could undergo medical education and training
MPP;	Medical Provisioning Point, for supplies and matériel
MS;	master seaman

MSD;	Medical Supply Detachment
MUST;	Medical Unit Self-contained Transportable, a mobile hospital system
MWO;	Master Warrant Officer, in the Canadian Armed Forces, the successor to Warrant Officer II
NA;	Nursing Assistant
NAR;	Nuclear Accident Response
National Survival;	operations following a nuclear attack
NATO;	North Atlantic Treaty Organization
NBCD/NBCW;	Nuclear, Biological, and Chemical Defence, previously referred to as Nuclear, Biological, and Chemical Warfare
NCM;	Non-Commissioned Member, or a member of the armed forces who is not an officer
NCO;	Non-Commissioned Officer, of corporal, sergeant, or warrant officer rank.
NDHQ;	National Defence Headquarters, in Ottawa
NDMC;	National Defence Medical Centre, in Ottawa
NGO;	Non-Governmental Organization, such as the Red Cross
No;	Number
NO;	Nursing Officer
Noble Lion;	name given to a major exercise in Gagetown, in 1991
No Duff;	a real, rather than simulated situation, as in 'No Duff casualties'
Nu;	Nurse
NWHS;	Northwest Highway System, otherwise known as the Alaska Highway
OC;	Officer Commanding, usually at unit level.
OD;	ordinary seaman
OIC;	Officer in Charge, usually of a specific project or mission.
OJT;	on the job training
Op;	Operations
Ops O;	Operations Officer
OR or Op Rm;	Operating Room, for surgery
OR;	other rank, any soldier who is not a commissioned officer
OTSSC;	Operational Trauma and Stress Support Centre, to treat psychological injury
Passage;	name given to humanitarian relief operations in Rwanda, 1994
Pastel;	name given to cease-fire observer operations in Angola, 1991-95
PB;	Pyridostigmine Prophylaxis, a counter-measure to nerve gas
PER;	Personnel Evaluation Report
Phyton;	name given to operations in the Western Sahara, 1991
PK;	peacekeeping
platoon;	sub-division of a company, with, usually, three platoons per.
PMAC;	Personnel Members' Administrative Committee
PMC;	Personnel Members' Committee, to deal with personnel issues common to all three services

PMED;	preventive medicine
P/O;	pilot officer, in the air force
PO;	petty officer, in the navy
POL;	Petroleum, Oil, and Lubricants
PPCLI;	Princess Patricia's Canadian Light Infantry
Preserver;	name given to operations in Djibouti, in 1991
Pte;	private
PTSD;	Post-Traumatic Stress Disorder, a form of psychological injury
PW or POW;	prisoner of war
QL;	Qualified Level, as in Qualified Level 5, for corporal
QM;	Quarter-Master, responsible for stores and supplies
QORofC;	Queen's Own Rifles of Canada
QRA;	Quick Reaction Area, where nuclear-armed aircraft were kept at readiness
QRO;	Queen's Regulations and Orders, which govern the armed services
R22R;	Royal 22e Régiment
RAF;	Royal Air Force
RAH;	Royal Alexandra Hospital, in Edmonton
RAP;	Regimental Aid Post, within a unit, succeeded by the Unit Medical Station
RCAF;	Royal Canadian Air Force
RCAMC;	Royal Canadian Army Medical Corps
RCASC;	Royal Canadian Army Service Corps, responsible for supply and logistics
RCD;	Royal Canadian Dragoons
RCHA;	Royal Canadian Horse Artillery, or the atillery of the regular force
RCN;	Royal Canadian Navy
RCR;	Royal Canadian Regiment
rd;	road
recce;	reconnaissance
Record;	name given to operations to map the Iraq-Kuwait border after the 1991 Gulf War
resuscitation;	provision of blood products to treat shock
RMC;	Royal Military College
RMED;	Regional Medical Equipment Depot
RMO;	Regimental Medical Officer, the same as a Unit Medical Officer
RN;	Royal Navy
ROTP;	Regular Officer Training Plan, by which an officer's education is paid for in return for service later
RR;	Recovery Room, after surgery
RSM;	regimental sergeant-major
RTU;	Returned to Unit, i.e. a soldier RTU'd from an exercise due to injury
RV;	Rendez-Vous, also a series of formation exercises beginning in 1981

Salon;	name given to an internal security operation near Oka, Quebec, in 1991
SAR;	Search and Rescue
Scalpel;	name given to the deployment of a Field Hospital to the Gulf War of 1991
Scimitar;	name given to the deployment of a fighter squadron to the 1991 Gulf War
section;	a subdivision of a platoon
SG;	Surgeon General, the highest ranking medical officer from the 1960s to the 1990s
Sgt;	sergeant
SHAPE;	Supreme Headquarters Allied Powers Europe, part of NATO
Sigs;	Signals
S/L;	squadron leader, in the air force
S/L;	sub-lieutenant, in the navy
SLE;	St Louis Encephalitis Virus, which causes inflamation of the brain
SMO;	Senior Medical Officer, usually for an area
SOP;	Standing Operating Procedure, a standardized series of steps to accomplish a given task
Sqn;	Squadron; in the armoured corps, a sub-division of a regiment in many ways the equivalent of an infantry company.
S/Sgt;	staff sergeant, in the army
SSC;	Short Service Commission, for officers serving only a few years
SSF;	Special Service Force, or 2 Brigade, in Petawawa
SSM;	squadron sergeant-major, in armoured units
SSO;	Senior Staff Officer
Starfighter;	a recurring base exercise conducted in Germany
Starfighter;	a fighter-interceptor aircraft, the CF 104
STDs;	Sexually Transmitted Diseases
Sultan;	name given to the deployment of an observer mission to Central America, 1989-92
Svc Bn;	Service Battalion, for supply and logistics
TB;	Treasury Board
TB;	tuberculosis
TBATD;	a combination of several vaccines to protect against a variety of diseases
TEMS;	Tent Expandable Module Sections, for the field hospital
TEWT;	Tactical Exercise without Troops
TF;	Task Force
TOET;	Test of Elementary Training, pluralized as TsOET or TOETs
TPDF;	Tanzanian People's Defence Forces
TQ;	Trade Qualification, i.e. TQ3 to qualify in a trade, TQ5 to qualify for corporal, TQ6A to qualify for sergeant, and TQ6B to qualify for warrant officer
UK;	United Kingdom

UMO;	Unit Medical Officer, the same as a Regimental Medical Officer
UMS;	Unit Medical Station, successor to the Regimental Aid Post
UN;	United Nations
UNEF or UNEFME;	United Nations Emergency Force or United Nations Emergency Force Middle East, to supervise the cease-fire between Israel and Egypt after the 1956 war
unit;	a generic term which could refer to an infantry battalion, an armoured regiment, etc. Several units together make up a formation.
UNPROFOR;	United Nations Protection Force, in the former Yugoslavia, 1992-95
US;	United States
USAF;	United States Air Force
USN or US Navy;	United States Navy
Vagabond;	name for operation to deploy to Iran-Iraq, 1988-91
VC;	the Victoria Cross, the highest award for valour in the Commonwealth
VCDS;	Vice Chief of the Defence Staff
VD;	venereal disease, now known as STDs
W/C;	wing commander, in the air force
WHO;	World Health Organization, an agency of the United Nations
WO;	warrant officer, in the Canadian Armed Forces
WO1 or WO 1;	warrant officer 1, in the army or RCAF
WO2 or WO 2;	warrant officer 2, in the army or RCAF
WREN or WRN;	Womens Royal Naval Service

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y the end of 1945, all three members of the Axis having surrendered, Canada, which had seen 1.1 million of its people serve in uniform, sought to return to peacetime pursuits. The three medical branches, of the army, navy, and air force, were substantially reduced in numbers.

eace, however, was elusive. War broke out in Korea, forces were sent to Europe, and the medical branches found themselves taking care not only of an expanding number of soldiers, sailors, and air personnel, but of their families as well. At the same time, what became the Canadian Forces Medical Service also treated civilians living near isolated stations and the victims of natural disasters. Observer, peacekeeping, and other overseas missions to far-flung corners of the globe posed their own particular challenges.

he Myriad Challenges of Peace studies the experiences of Canadian Forces medical practitioners as they dealt with issues of recruiting, training, logistics, research, and, of course, operations in the harsh and complicated world of post-1945.

Author of Death their Enemy: Canadian Medical Practitioners and War, Bill Rawling is currently a historian with Canada's Department of National Defence.

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